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International Law and the Preservation of the Ocean Space and Outer Space as Zones of Peace: Progress and Problems

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ARTICLES

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Isaak I. Dore†

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† Associate Professor of Law, Southern Illinois University, Carbondale, Illinois. Formerly Human Rights Officer, Division of Human Rights, United Nations, Geneva, Switzerland. J.D., LL.M., Zambia; LL.M., J.S.D., Yale University.

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INTRODUCTION

The high seas (including the seabed) and outer space (including celestial bodies) show every indication of becoming frontiers of increasing economic and military interest and competition between states, especially the two superpowers. This article is limited to a comparative study of the legal aspects of military activity in these two frontiers. Because much of that military activity requires a technology which only the United States and the Soviet Union currently possess, or have the resources to develop, the article discusses the demilitarization of the seas and outer space primarily from a Soviet-American perspective. However, insofar as much of the effort to demilitarize the high seas and outer space has taken place under the auspices of the United Nations, and since much of the treaty law on the subject[1] consists of U.N. sponsored multilateral conventions, the ensuing discussion ought not to be read as a treatment of a question that is exclusively bilateral or bipolar in nature. The treaties raise legal problems of demilitarization of general interest to all states, transcending any immediate superpower interest therein.

It should be apparent to even the most casual observer of the current system of international relations that both outer space and the high seas are and will continue to be areas of military interest to many of the world's more powerful states. Submarines and other sophisticated underwater strategic weapons systems are being developed for deployment in the vast reaches of the oceans.[2] As for outer space, satellite bombardment systems and laser beam weaponry may soon be a reality.[3]

In light of such technological developments, this article will examine which of the two frontiers presents a greater potential for

1. United Nations treaty law on the subject chiefly comprises the 1958 Geneva Convention (*see infra* notes 28, 82 & 127), the 1971 Seabed Treaty (*see infra* note 36), the 1980 Draft Convention of UNCLOS III (*see infra* note 46), the Outer Space Treaty (*see infra* note 50), and the Moon Treaty (*see infra* note 225). None of these treaties, however, are bilateral.

2. *See* Evensen, *Present Military Uses of the Seabed and Foreseeable Developments*, 3 CORNELL INT'L L.J. 121, 124-26 (1970).

3. *See infra* note 191 and accompanying text.

military use as well as how the international community has begun to regulate such use. Each frontier poses its own unique possibilities; hence the study is divided into two distinct but interrelated parts. The article will examine and compare the military potential of both the high seas (and the seabed) and of outer space. It also will describe traditional as well as comparatively recent military uses to which they have been put.[4] In addition to the use of the sea and space for strategic weapons, there is the thorny problem of the use of these two frontiers for "defensive" purposes; principally, for surveillance, verification and detection. These non-agressive and non-violent uses also raise significant military questions.

It is against the background of these challenges that the article will measure the adequacy of the treaty law governing military activity in the oceans and in outer space. It will analyze the treaties' provisions in terms of their effectiveness in achieving the goals of demilitarization, as well as analyze how state conduct has worked to achieve the same goals. This approach has a dual purpose: to indicate the limitations of any large-scale effort to restrict state conduct through "treaty law" and, perhaps ironically, to use state conduct itself as a guide to the interpretation of the appropriate treaties and conventions. Finally, the article presents concluding reflections on the future prospects for demilitarization of the seas and outer space.

I

PROBLEMS OF 'PEACE' IN THE EVOLVING LAW OF THE SEA

A. Introductory Note on the Economic and Military Potential of the High Seas

There are two primary reasons for the growing superpower interest in the high seas: the use of the sea and seabed for military purposes, and the exploitation of the sea's living and nonliving economic resources.

Until recently, the economic potential of the oceans has been largely untapped. When it has been tapped, the activity has been almost invariably unregulated, and has led to pollution, overfishing and a reduction of the quality of fish stocks.[5] International regula-

4. The current international practice is to treat matters relating to the use of nuclear weapons and weapons of mass destruction separately from matters relating to the use of conventional weapons. Both of these uses on the earth's land mass pose grave questions for mankind, and, if extended to the high seas and outer space, present even more formidable challenges.

5. In the field of fisheries, a study by the Food and Agricultural Organization of the United Nations indicates that major fishing areas of the world are fast reaching their maximum potential fish yield. Pabst, Major Issues of the Law of the Sea 85 (1976).

tion could not only reduce or eliminate these problems, but it could also result in a "blue revolution" of even greater importance than the "green revolution" of recent years.[6]

While today offshore drilling provides some twenty percent of the world's total oil production, by the mid-1990's it will account for almost fifty percent of global production.[7] The mineral resources of the seabed are in such great abundance that once they become commercially exploitable through the requisite technological and legal developments, they could meet substantial percentages of the world's mineral needs.[8] Advances in marine geology also will undoubtedly lead to additional discoveries of mineral deposits in the seabed.

Other growing areas of ocean activity include ocean transportation and communications, and underwater storage and recreational facilities.[9] Factories, industries and oil refineries are being moved to man-made floating platforms or artificial islands.[10] In short, in the years to come the oceans will open up a vast frontier for a new industrial civilization that will depend on the sea for its survival.

Yet the future importance of the oceans will transcend the purely economic aspect of man's existence or survival. The sea and seabed are fast becoming areas of strategic and military interest, particularly for the U.S. and the U.S.S.R. Both powers are aware that technological advances in multiple-warhead missile systems as well as in observational systems have made land-based strategic weapons systems vulnerable to attack.[11] Even the deployment of anti-ballistic missile (ABM) systems does not significantly offset the threat posed by Multiple Independently Targeted Re-entry Vehicle (MIRV) sys-

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Evidence of over-fishing is also well-documented. *See id.* at 85-86. For a discussion of international efforts to deal with the problem of oil pollution of navigable waters through international agreement, see *id.* at 107-24.

6. *See generally,* C. Ray, *Ecology, Law and the Marine Revolution,* in PACEM IN MARIBUS 6 (E. Borgese ed. 1972).

7. J. Charney, *The Equitable Sharing of Revenues from Seabed Mining,* in POLICY ISSUES IN OCEAN LAW 53, 69 (1975).

8. Studies indicate that a substantial portion of the world's needs for copper, cobalt, nickel and manganese can be satisfied by economically efficient exploitation of the deep seabed. *See* D. Johnson & D. Logue, *U.S. Economic Interests in Law of the Sea Issues,* in THE LAW OF THE SEA: U.S. INTERESTS AND ALTERNATIVES 37, 37-47 (C. Amacher & R. Sweeney eds. 1976).

9. J. Craven, *Ocean Arms Control,* in QUIET ENJOYMENT: ARMS CONTROL AND POLICE FORCES FOR THE OCEAN 155, 155-71 (1970).

10. "Floating nuclear plants" are discussed in Kindt, *The Offshore Siting of Nuclear Power Plants,* 8 OCEAN DEV. & INT'L LAW J. 57, 64-65 (1980). *See also* Nanda, *The Legal Status of Surface Devices Functioning at Sea Other Than Ships,* 26 AM. J. COMP. L. 233 (1978).

11. Reisman, *The Regime of Straits and National Security: An Appraisal of International Lawmaking,* 74 AM. J. INT'L LAW 48, 48-50 (1980). Reisman explains that land-based missiles have a "preemption and first-strike attraction" that adversaries may not ignore. He suggests that submarine missiles offer a more reliable deterrent. *Id.* at 50-51.

tems.[12] Thus, moving strategic weapons from land into the protective opaqueness of the sea is currently a highly attractive proposition.[13] Such a move could be geared to improve a state's offensive and defensive capabilities[14] through squadrons of submarines, fixed submarine detection systems and other manned and unmanned underwater weapons systems.[15]

The concept of undersea deterrence is not based on the belief that no single vessel can be destroyed by the enemy.[16] Instead, it is based on the principle that an undersea system is nontargetable at any given time. Consequently, in the event of attack, enough vessels would survive to strike back.[17]

An undersea deterrent system would also provide longer reaction time in a crisis situation.[18] Even the basing of missile systems on the *surface* of the sea could make them less vulnerable than land-

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12. N. Brown, *Military Uses of the Ocean Floor,* in PACEM IN MARIBUS, *supra* note 6, at 285. Mr. Brown suggests that ABM's be deployed in the oceans to intercept MIRV's before the warheads separate. *Id.* at 291.

Another possible development is the placement of the controversial MX missile system on hundreds of conventionally powered submarines. Indications at the time of this writing (September 1982) are, however, that a land-based version of the system is likely to win final approval.

13. THE TIDES OF CHANGE 78 (E. Borgese & D. Krieger eds. 1975). *See also* Hirdman, *Prospects for Arms Control in the Ocean,* in *id.* at 80-89; Reisman, *supra* note 11, at 48, 50.

14. E. Brown, ARMS CONTROL IN HYDROSPACE 12-14 (1971) [hereinafter cited as ARMS CONTROL IN HYDROSPACE].

15. One study states the advantages of underseas weapons systems as follows:

> The absorption of water with respect to light, high-energy particles, electromagnetic radiation, heat and other known forms of energy is such that, except for acoustic radiation, none of the mechanisms postulated has a detection range potential which is significant when compared with the vast areas available in the ocean. The ultimate test in this regard is the ability of the submersible to blend with and be masked by the environment. At near zero speed this ought to be quite attainable. The hotel load for life support and weapons readiness is modest, and if, for example, power is supplied by fuel cell, the machinery associated with it should be extremely quiet. Drifting in the current, at great depth or at low speeds, the hydrodynamic wake would be insignificant. A further aid would be the capability to move very close to the bottom, rendering the submersible difficult to detect by long-range, active sonar. Ultimately, the underseas weapons systems could develop into something akin to a manned on-the-bottom, slowly mobile mine.

J. Craven, *Ocean Technology and Submarine Warfare,* in THE IMPLICATIONS OF MILITARY TECHNOLOGY IN THE 1970's (Adelphi Paper No. 46) 38, 41-42 (London 1968).

16. SIPRI YEARBOOK OF WORLD ARMAMENTS AND DISARMAMENTS 1968/69, 99-100 (1970).

17. *Id.* Ideally, greater protection gained through the ability to hide underwater ensures at least a "second strike" capability. Reisman, *supra* note 11, at 52-53.

18. This would particularly apply to nuclear weapons, the hasty use of which could create an untold amount of unnecessary damage. In the event of a crisis, longer reaction time would permit a sober and more rational assessment of the most prudent measures of retaliation. N. Brown, *supra* note 12, at 285, 291. *See also* E. Brown, *The Legal Regime of Inner Space,* 22 CURRENT LEGAL PROB. 181, 183 (1969).

based systems, especially if they are mounted on very fast surface-effect vehicles, prototypes of which are already being built in the United States.[19]

In view of each of these advantages, the potential for militarization of the seas and the seabed could be extensive.[20] It is clear that contemporary oceanological research relating to the economic exploitation of the seabed cannot take place without the preservation of the oceans as a zone of peace. The need to reserve the oceans for peaceful uses is even more urgent in light of their potential for military use. The following sections examine whether current treaty law fulfills that need.

B. THE DEMILITARIZATION OF THE SEABED: CONTEMPORARY LEGAL ASPECTS

The current legal regime for the demilitarization of the seabed has evolved in a unique manner, initiated largely through the trading of unilateral proposals and counterproposals between the United States and the Soviet Union.[21] Concerted criticisms of different aspects of the proposals of both superpowers led to the eventual adoption of the current treaty law; law which is fraught with uncertainties. One may attribute the uncertainties, in part, to the fact that the treaty law that did evolve was the legal expression of a series of political compromises.

In 1969 both the United States and the Soviet Union submitted draft treaties[22] to the Geneva Conference of the Eighteen Nation

19. SIPRI YEARBOOK OF WORLD ARMAMENTS AND DISARMAMENTS 1969/70 95 (1971) [hereinafter cited as SIPRI YEARBOOK 1969/70].

20. Drastic cutbacks in both powers' space programs have diverted research in the aerospace industry from outer space to "inner space"—the oceans. United States aerospace firms have directed their surplus capacity toward the development of prototypes of various kinds of submersibles and equipment for ocean use. The result is that contemporary oceanological research has become increasingly oriented towards the military. L. Ritchie-Calder, *In Quiet Enjoyment,* in PACEM IN MARIBUS, *supra* note 6, at 260, 262. *See also* E. Young, *Arms Control and Disarmament in the Ocean,* in *id.* at 268-69.

21. *See infra* notes 23-35 and accompanying text. The first serious attempts at the international level to reserve the seabed, the ocean floor and the subsoil thereof exclusively for peaceful purposes did not occur until 1967. In that year the United Nations established a seabed committee to study different aspects of this endeavor. U.N. Doc. A/Res./2340 (1968). *See also* U.N. Doc. A/Res./2467 (1968).

22. United States of America: Draft Treaty Prohibiting the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and Ocean Floor, U.N. Doc. ENDC/249 (1969) [hereinafter cited as U.S. Draft Treaty], *reprinted in* OFFICIAL RECORDS OF THE DISARMAMENT COMMISSION Annex C, at 25 (1969 Supp.); Union of Soviet Socialist Republics: Draft Treaty on Prohibition of the Use for Military Purposes of the Sea-Bed and the Ocean Floor and the Subsoil Thereof, U.N. Doc. ENDC/240 (1969), [hereinafter cited as U.S.S.R. Draft Treaty] *reprinted in id.,* at 14.

Disarmament Conference (ENDC).[23] The Soviet draft treaty advocated total demilitarization of the seabed and ocean floor,[24] in keeping with the Soviets' concern that a prohibition limited to weapons of mass destruction could lead to the development of a conventional arms race in the oceans.[25] The U.S. draft treaty called for denuclearization of the seabed environment.[26] As a major naval power, the United States was not prepared to accept a ban on all military activities on the seabed. It argued that complete demilitarization could in fact threaten a state's security if that state was not able to adequately defend itself in the seas.[27]

In an attempt to produce a mutually acceptable treaty, the two powers exchanged proposals and counterproposals in their capacities as cochairmen of the Disarmament Conference. Early in October 1969, the U.S. and the U.S.S.R. agreed on a joint draft treaty which provided that the parties would not emplant or emplace on the seabed and the ocean floor, and in the subsoil thereof beyond a certain area, any objects with nuclear weapons or weapons of mass destruction, as well as structures, launching installations or any other facili-

23. The Eighteen Nation Disarmament Conference (ENDC) was created in 1961 to provide a forum in which member nations could discuss disarmament questions of common interest, particularly with respect to nuclear disarmament. G.A. Res. 1722, 16 U.N. GAOR Supp. (No. 17) at 7, U.N. Doc. A/4980/Add.2 (1961). Originally comprised of eighteen members, the ENDC admitted several other states in 1969. In August 1969, the ENDC was renamed "Conference of the Committee on Disarmament" (CCD). U.N. Doc. DC/232 (1969). For an extensive description of the ENDC's activities, see THE UNITED NATIONS AND DISARMAMENT 1945-70, at 108-89 (1970).

24. U.S.S.R. Draft Treaty, *supra* note 22 at art. I. This proposal was in keeping with the Soviet Union's request in 1968 that the ENDC take up the "question of prohibiting the use for military purposes of the sea-bed and the ocean floor." U.N. Doc. A/AC135/20 (1968).

25. The Soviet Draft Treaty sought to prohibit the placement of objects with nuclear weapons or any other weapons of mass destruction on the seabed and the ocean floor and the subsoil thereof, as well as the setting up of military bases, structures, installations, fortifications and other objects of military nature beyond the 12-mile maritime zone of coastal states. U.S.S.R. Draft Treaty, *supra* note 22, at art. I. The Soviet Draft Treaty also proposed that all installations and structures on the seabed and the ocean floor and the subsoil thereof would be open to inspection on a reciprocal basis by any state party to the treaty. *Id.* art. II.

26. U.S. Draft Treaty, *supra* note 22, at art. I. The Treaty prohibited fixed nuclear weapons or other weapons of mass destruction or associated fixed launching platforms on, within, or beneath the seabed and ocean floor beyond a three-mile band adjacent to the coast of any state. *Id.* The U.S. Draft Treaty also provided that each state has the right to observe other states' activities on the seabed and ocean floor without interference. *Id.* art. III, para. 1. Finally, the U.S. Draft Treaty proposed a scheme for mutual consultation between states in the event that there were doubts concerning the observance of the Treaty's provisions. *Id. See also* U.N. Doc. A/AC135/24 (1968).

27. *See* Barry, *The Seabed Arms Control Issue 1967-71: A Superpower Symbiosis?*, 61 INT'L LAW STUD. 572, 577 (U.S. Naval War College, R. Lillich & J. Moore eds. 1980).

The U.S. also objected to a Soviet proposal that permitted reciprocal verification of seabed installations and structures. *See* 24 U.N. GAOR, Supp. (No. 1) at 30-31, U.N. Doc. A/7601 (1969).

ties specifically designed for storing, testing or using such weapons.[28]

The other member nations of the United Nations severely criticized the joint draft treaty and refused to ratify it.[29] Criticism centered around the rights of coastal states under the draft treaty,[30] its verification provisions[31] and the veto power it accorded to nuclear weapons states.[32] The U.S. and the U.S.S.R. submitted second[33] and third[34] revised joint treaties, each of which failed to gain majority approval. Finally, in late 1970, the drafting efforts of the two nations resulted in a final draft[35] that an overwhelming majority of member states adopted. On February 11, 1971, the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of

28. Joint American-Soviet Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof, U.N. Doc. CCD/269 (1969) [hereinafter cited as First Draft Treaty].

The area indicated was the maximum contiguous zone provided for in the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone. The contiguous zone consists of the 12 miles that extend from a nation's shores seaward. The Geneva Convention on the Territorial Sea and the Contiguous Zone, *done* Apr. 29, 1958, 15 U.S.T. 1606, T.I.A.S. No. 5639, 516 U.N.T.S. 205 [hereinafter cited as the 1958 Territorial Sea Convention]. In essence, the First Draft Treaty represented an exchange of a widening of the exempted zone to 12 miles for an agreement that the treaty should encompass only nuclear weapons and other weapons of mass destruction. *See* N.Y. Times, Oct. 5, 1969, at A12, col. 7. For further description of the First Draft Treaty's provisions, *see* in Leonard, *U.S. and U.S.S.R. Agree on Draft Treaty Banning Emplacement of Nuclear Weapons on the Seabed,* 61 DEP'T OF STATE BULL. 365 (Nov. 3, 1969).

29. Barry, *supra* note 27, at 579-80.

30. Coastal states objected to the First Draft Treaty because it failed to clearly define the status of the region between the 12-mile limit and the outer boundary of territorial waters. Under the treaty, it arguably would be possible for one state to legally emplant weapons within 12 miles of the coast of another state. *Id.* at 580.

31. The First Draft Treaty provided that "States Parties to the Treaty shall have the right to verify . . . using [their] own means or with the assistance of any other State Party." First Draft Treaty, *supra* note 28, at art. III. States which lacked the technical resources to carry out verification operations recommended that the U.N. Secretary General be given the power to assist in supervising compliance when complaining states could not verify compliance themselves. Barry, *supra* note 27, at 580.

32. The First Draft Treaty provided that a majority vote, including an affirmative vote by all nuclear powers, was necessary for amendment of the treaty. First Draft Treaty, *supra* note 28, at art. IV. Critics of this provision voiced fears that such a requirement would foster a nuclear power monopoly over a demilitarization of the seabed. Barry, *supra* note 27, at 580.

33. U.N. Doc. CCD/269/Rev.1 (1969). The Second Draft Treaty provided a right of recourse to the U.N. Security Council in the event of serious doubts concerning fulfillment of the treaty obligations, a provision for a review conference, and an equal vote to all parties on all future amendments. *Id.* arts. III, IV & V.

34. U.N. Doc. CCD/269/Rev.2 (1970). Again, the drafting efforts of the two powers failed to gain majority approval. Critics demanded that a binding committee be established to continue negotiations for further measures to prohibit military use of the seabed, that the treaty make verification a matter of international regulation, and that it respect the sovereign rights of coastal states. *See* Barry, *supra* note 27, at 580-81.

35. U.N. Doc. CCD/269/Rev.3 (1970). The Disarmament Committee submitted the final draft to the First General Assembly Committee for debate in early 1970. 25 U.N. GAOR Annex A (Agenda Item Nos. 27-31, 93-94) at 1, U.N. Doc. A/8198 (1970).

Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof (1971 Seabed Treaty) was simultaneously executed in Moscow, Washington, D.C. and London.[36]

The opening article of the 1971 Seabed Treaty reflects its primary purpose:

> The States Parties to this Treaty undertake not to emplant or emplace on the seabed and the ocean floor and in the subsoil thereof beyond the outer limit of a seabed zone, . . . any nuclear weapons or any other types of weapons of mass destruction as well as structures, launching installations or any other facilities specifically designed for storing, testing or using such weapons.[37]

The prohibited zone is coterminous with the twelve-mile outer limit of the zone referred to in the 1958 Territorial Sea Convention.[38] Thus, the 1971 Seabed Treaty's essential proscription with respect to nuclear and other weapons of mass destruction is limited to the deployment of such weapons[39] beyond the twelve-mile zone surrounding a signatory's shores.[40]

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36. Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof, *done* Feb. 11, 1971, 23 U.S.T. 701, T.I.A.S. No. 7337 (effective May 18, 1972) [hereinafter cited as 1971 Seabed Treaty].

37. 1971 Seabed Treaty, *supra* note 36, at art. I. Article I of the 1971 Seabed Treaty refers to the deployment of nuclear and other mass destruction weapons which have been tested and are ready for use. The Nuclear Test Ban Treaty, on the other hand, prohibits any nuclear explosion, whether before, at or beyond the testing stage. It provides in part:

> 1. Each of the parties to this Treaty undertakes to prohibit, to prevent, and not to carry out any nuclear weapon test explosion, or any other nuclear explosion, at any place under its jurisdiction or control:
> (a) in the atmosphere; beyond its limits, including outer space; or under water, including territorial waters or high seas; or
> (b) in any other environment if such explosion causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted.

Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, *done* Aug. 5, 1963, 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43, 45 (effective Oct. 10, 1963) [hereinafter cited as Test Ban Treaty].

38. 1971 Seabed Treaty, *supra* note 36, at art. II. Part II of the 1958 Territorial Sea Convention provides in part:

> 1. In a zone of the high seas contiguous to its territorial sea, the coastal state may exercise the control necessary to:
> (a) prevent infringement of its customs, fiscal, immigration or sanitary regulations within its territory or territorial sea,
> (b) punish infringement of the above regulations committed within its territory or territorial sea.
> 2. The contiguous zone may not extend beyond twelve miles from the baseline from which the breadth of the territorial sea is measured.

1958 Territorial Sea Convention, *supra* note 28, at art. 24.

39. *See supra* note 37.

40. The scope of the prohibition under the Test Ban Treaty is more wide-ranging *ratione loci;* it applies to tests in the atmosphere, in outer space, in territorial waters and the high seas, as well as "in any other environment if [the] explosion causes radioactive debris to be present outside the territorial limits of the state under whose jurisdiction or control such explosion is conducted." Test Ban Treaty, *supra* note 37, at art. I. The phrase "in any other environment" would include areas such as the subsoil of a state's

To ensure compliance with its provisions, the 1971 Seabed Treaty provides a scheme for verification of state activity.[41] States may verify whether another state is complying with the Treaty's provisions either through individual observation or through bilateral and multilateral consultation. If observation and consultation do not provide adequate verification, any state may refer the matter to the Security Council, "which may take action in accordance with the Charter."[42] The verification process may not interfere either with the activity being observed or with the traditional freedoms of the high seas.[43]

Any party may propose amendments to the Treaty; amendments may come into force "for each Party accepting the amendments upon their acceptance by a majority of the States Parties to the Treaty and thereafter for each remaining State Party on the date of acceptance by it."[44] Finally, the Treaty also contains an escape clause whereby any signatory has "the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized the supreme interests of its country."[45]

C. The Controversy over "Peaceful Purposes" Revisited in Light of the 1971 Seabed Treaty and the Draft Convention of UNCLOS III

The 1971 Seabed Treaty, perhaps because it is essentially the legal expression of a political compromise, contains numerous flaws and ambiguities. The Treaty's primary purpose may be defeated if these ambiguities are not clarified. As it stands now, signatories to the 1971 Seabed Treaty may avoid complying with its essential pro-

territorial waters. If an explosion conducted in the subsoil of territorial waters does not cause radioactive debris beyond a state's territorial and jurisdictional limits, however, the explosion would fall outside the scope of the Test Ban Treaty. The same would apply to the subsoil of the high seas, although it is arguable that all explosions there are prohibited regardless of whether or not they cause radioactive debris outside territorial limits, since the subsoil of the high seas would, for the testing state, be a place "beyond its limits" and therefore prohibited under the Test Ban Treaty.

41. 1971 Seabed Treaty, *supra* note 36, at art. III paras. 1-3.

42. *Id.* art. III, para. 4.

43. *Id.* art. III, para. 1. All verification activity must be conducted "with due regard for rights recognized under international law including the freedoms of the high seas and the rights of coastal States with respect to the exploration and exploitation of their continental shelves." *Id.* art. III, para. 6. For a description of the traditional freedoms of the high seas, see *infra* note 82 and accompanying text.

44. *Id.* art. VI.

45. *Id.* art. VIII. Another article provides that the parties "undertake to continue negotiations in good faith concerning further measures in the field of disarmament for the prevention of an arms race on the seabed, the ocean floor, and the subsoil thereof." *Id.* art. V.

visions, arguably without violating its terms. The recent draft convention of the Ninth Session of UNCLOS III, the Third United Nations Conference on the Law of the Sea (Draft Convention),[46] appears to permit the same. Neither document requires signatories to limit their activities to non-military ones.

1. "Peaceful Purposes" and the 1971 Seabed Treaty

An area of ambiguity central to the 1971 Seabed Treaty's effectiveness concerns its reference to "peaceful purposes." The preamble declares that the parties recognize "the common interest of mankind in the progress of the exploration and use of the seabed and the ocean floor for peaceful purposes."[47] The term "peaceful purposes" is undefined and has generated conflicting interpretations.[48] This controversy did not originate with the 1971 Seabed Treaty; it first attracted attention with the coming into force of the Antarctic Treaty[49] in 1961, and again in 1967 with the coming into force of the Outer Space Treaty.[50]

The preamble to the Antarctic Treaty provides that the parties recognize that "it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord."[51] The preamble to the Outer Space Treaty contains a provision almost identical to that contained in the 1971 Seabed Treaty; the Parties are to recognize "the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes."[52] The Outer Space Treaty also provides that "[t]he moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively

46. The Draft Convention on the Law of the Sea of the Ninth Session of the UNCLOS III, U.N. Doc. A/CONF.62/WP.10/Rev.1 (1980) [hereinafter cited as Draft Convention].

47. 1971 Seabed Treaty, *supra* note 36, at preamble.

48. O. Ogunbanwo, INTERNATIONAL LAW AND OUTER SPACE ACTIVITIES 28-33 (1975). Mr. Ogunbanwo explains that two schools of thought have emerged with respect to the proper interpretation of the term "peaceful purposes." One interprets the term to mean "non-military," while the other interprets it to mean "non-aggressive." *Id.* at 28. *See also* SIPRI YEARBOOK 1969/70, *supra* note 19, at 157-63.

49. The Antarctic Treaty, *done* Dec. 1, 1959, 12 U.S.T. 794, T.I.A.S. No. 4780, 402 U.N.T.S. 71 (effective June 23, 1961).

50. Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space Including the Moon and Other Celestial Bodies, *done* Jan. 27, 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347, 510 U.N.T.S. 205 (1967) [hereinafter cited as Outer Space Treaty].

51. Antarctic Treaty, *supra* note 49, at preamble. The first article also provides that Antarctica "shall be used for peaceful purposes only" and that "any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons" shall be prohibited. *Id.* at art. I.

52. Outer Space Treaty, *supra* note 50, at preamble.

for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on celestial bodies shall be forbidden."[53]

It could be argued that in the context of the Antarctic and the Outer Space Treaties, the term "peaceful purposes" means "non-military purposes." The Antarctic Treaty prohibits "any measures of a military nature."[54] The broad sweep of this phrase would seem to indicate that all military activity is prohibited, whether for offensive or defensive purposes. All defensive acts are of a military nature and all measures taken in preparation for such acts cannot therefore be for a "peaceful *purpose.*" The same interpretation arguably could be given to the Outer Space Treaty which, in fact, employs even stronger language by providing that the moon and celestial bodies shall be used "*exclusively* for peaceful purposes."[55]

The view of the non-aligned countries in the United Nations is that the use of a given environment for peaceful purposes necessarily excludes all military activities whatever their purpose, and that there is no reason to depart from this interpretation with respect to the 1971 Seabed Treaty.[56] The Soviet Union also equates "peaceful purposes" with "non-military purposes," and applies the same line of reasoning to the 1971 Seabed Treaty.[57]

Yet, signatories to the 1971 Seabed Treaty could arguably utilize the high seas for military purposes without violating the Treaty's provisions. Numerous ambiguities in the text could allow states to circumvent the Treaty's "peaceful purposes" requirement. One area of ambiguity involves the question of whether the Treaty prohibits the emplacement of all nuclear devices on the seabed. For example, Article I extends the weaponry ban only to "nuclear weapons or any other types of weapons of mass destruction."[58] It also prohibits "structures, installations or any other facilities designed for storing testing or using *such* weapons" (*i.e.,* nuclear weapons or other weapons of mass destruction).[59] While the Treaty does not define either the term "nuclear weapons" or the term "weapons of mass destruction," the early U.S. opposition to the Soviet proposal for complete demilitarization of the seabed and ocean floor[60] would indicate that

53. *Id.* art. IV.
54. Antarctic Treaty, *supra* note 49, at art. I.
55. Outer Space Treaty, *supra* note 50, at art. IV. (emphasis added).
56. SIPRI YEARBOOK 1969/70, *supra* note 19, at 157.
57. *Id.* at 157-58.
58. 1971 Seabed Treaty, *supra* note 36, at art. I.
59. *Id.* (emphasis added).
60. *See supra* notes 26-27 and accompanying text.

weapons falling outside these two categories were not intended to be covered by the ban.

From a purely logical perspective, moreover, Article I of the 1971 Seabed Treaty refers only to nuclear *weapons* and not to all nuclear devices generally. Arguably, if it can be shown that a particular nuclear device is not a weapon; or if that device is shown to involve non-weapon applications of nuclear energy, it would not be covered by the ban.[61] Similarly, the absence of a definition of a nuclear weapon makes it unclear whether, from a purely textual point of view, the 1971 Seabed Treaty must be deemed to have also prohibited the peaceful application of nuclear energy in such areas as seabed transport, or with respect to mining, drilling or blasting on the seabed for purely commercial reasons.[62]

Unfortunately, none of the draft seabed treaties that the U.S. or the U.S.S.R. forwarded before or after the 1971 Seabed Treaty deal directly with this question. The Soviet draft articles of a treaty on the use of the seabed for peaceful purposes submitted in July 1971,[63] provided that "[t]he use of the sea-bed and the subsoil thereof for military purposes shall be prohibited."[64] The draft articles did not define "military purposes"; nor did they make any reference to non-weapon applications of nuclear energy under water. Similarly, a U.S.-sponsored draft convention on the international seabed area[65] submitted in 1970 provided that the "International Seabed Area

61. *See* E. Brown, *supra* note 18, at 202. Mr. Brown suggests that an exemplificative list of mass-destruction systems should supplement the Treaty's provisions in order to better illustrate the scope of its prohibition. To compile such a list, he suggests drafters should look to the character and capacity of a weapons system as well as its purpose. *Id.*

62. It may be noted that the 1967 Treaty for the Prohibition of Nuclear Weapons in Latin America (the Treaty of Tlatelolco) defines a "nuclear weapon" as "any device which is capable of releasing nuclear energy in an uncontrolled manner and which has a group of characteristics that are appropriate for use for warlike purposes. An instrument that may be used for the transport or propulsion of the device is not included in this definition if it is separable from the device and not an indivisible part thereof." Treaty for the Prohibition of Nuclear Weapons in Latin America, *done* Feb. 14, 1967, 634 U.N.T.S. 281, 332.

The U.S. contends that only weapons of mass destruction could have enough military significance to warrant the expense of stationing them on the seabed. SIPRI YEARBOOK 1969/70, *supra* note 19, at 158. The U.S. also asserts that conventional military use of the seabed is not likely to threaten the territories of states either now or in the near future. *Id.* If this is the case, the U.S. should not have objected to including conventional weapons in the ban. (*See supra* notes 26-27 and accompanying text). As most members of the Disarmament Committee felt, by specifically prohibiting only nuclear weapons and weapons of mass destruction, the 1971 Seabed Treaty may give the impression that it condones the use of conventional weapons on the seabed. SIPRI YEARBOOK 1969/70, *supra* note 19, at 159.

63. U.N. Doc. A/AC. 138/43 (submitted to the U.N. Seabed Committee July 22, 1971).

64. *Id.* art. 1.

65. U.N. Doc. A/AC. 138/25 (submitted to the U.N. Seabed Committee August 3, 1970).

shall be reserved exclusively for peaceful purposes."[66] The draft failed to define the term "peaceful purposes," and made no mention of non-weapon applications of nuclear energy.

Several other ambiguities in the 1971 Seabed Treaty render its effectiveness with respect to demilitarization uncertain. For example, Article I provides that "States Parties to this Treaty undertake not to emplant to emplace on the seabed and the ocean floor and in the subsoil thereof . . . any nuclear weapons or any other types of weapons of mass destruction . . ."[67] While the difference between "emplant" and "emplace" is not explained anywhere in the Treaty, references to the "seabed," the "ocean floor," and its "subsoil" appear to refer to fixed installations and to exclude from the ban submarines equipped with conventional or nuclear weapons, either while riding at anchor or while lying on the seabed.[68]

Vehicles carrying weapons of mass destruction that are capable of navigating when they are in contact with the seabed—"on-the-bottom slowly-mobile mines"—also arguably are excluded from the Treaty's ban.[69] Such vehicles, known as "creepy-crawlies,"[70] seem to escape the ban by virtue of the fact that they are mobile and not fixed to the seabed, ocean floor, or its subsoil.[71] Such vehicles need not, however, be mobile all the time and may rest on the seabed for indefinite periods of time. The fact that they are *capable* of navigation independently of the seabed would arguably exclude such vehicles from the Treaty's ban.

The clause in the 1971 Seabed Treaty on structures and installations "specifically designed for storing, testing or using"[72] weapons of mass destruction also permits potential military use of the seabed.

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66. *Id.* art. 1.

67. 1971 Seabed Treaty, *supra* note 36, at art. I.

68. *See* Joyner, *Towards a Legal Regime for the International Seabed: The Soviet Union's Evolving Perspective,* 15 VA. J. INT'L L. 871, 884 (1975). *See also* Barry, *supra* note 27, at 583. The U.S. delegate to the Disarmament Committee himself confirmed the view that the Treaty does not exclude submarines:

> [V]ehicles which can navigate in the water above the sea-bed and submarines should be viewed in the same way as any other ships; submarines would therefore not be violating the treaty if they were either anchored to, or resting on, the sea-bed.

U.N. Doc. CCD/PV. 440 (1970).

Perhaps one reason for the exclusion of submarines from the ban is that their deployment *already* provides a rough and ready peace-through-mutual-deterrence guarantee with which nations should not tamper.

69. *See* Barry, *supra* note 27, at 583. The U.S. has argued that limiting such vehicles would infringe upon a nation's freedom of navigation. *See infra* note 71.

70. ARMS CONTROL IN HYDROSPACE, *supra* note 14, at 58.

71. *See* G. Smith, *Ambassador Smith Presents U.S. Views on Seabed Proposal at Eighteen-Nation Disarmament Conference,* 60 DEP'T OF STATE BULL. 333, 337 (April 21, 1969).

72. 1971 Seabed Treaty, *supra* note 36, at art. I.

Whether or not a particular structure is included in the ban will arguably depend on its design and not on its purpose. It is possible that a vehicle may be designed for something other than the delivery of weapons of mass destruction, and yet be *capable* of delivering such weapons. If original design is retained as the sole criterion such vehicles would also escape the ban. If the ban is limited to those vehicles or structures that are fixed to the seabed, even surface-based nuclear missile systems may be permissible under the Treaty.[73]

Finally, the 1971 Seabed Treaty does not discuss what limitations, if any, exist with respect to military use of the zones immediately surrounding a state's territory. Article II of the Treaty provides that the outer limit of the prohibited zone "shall be coterminous with the twelve-mile outer limit of the zone referred to in Part II of the Convention on the Territorial Sea and the Contiguous Zone. . . ."[74] The Treaty thus leaves coastal states free to emplace or to invite allies to emplace weapons of mass destruction within their twelve-mile coastal zones.[75]

In view of the leeway which the 1971 Seabed Treaty affords its signatories with respect to military use of the seas, its use of the term "peaceful purposes" cannot mean "non-military purposes," however unpalatable this may be to those genuinely concerned with excluding the oceans from the arms race. The preamble in fact declares that the Treaty is only "a step towards the exclusion of the seabed, the ocean floor and the subsoil thereof from the arms race."[76] Similarly, under Article V the parties recognize the need for further negotiations to save the oceans from the arms race, and pledge their willingness to negotiate in good faith toward this goal.[77]

2. *"Peaceful Purposes" in Light of the Traditional Uses of the High Seas*

Use of the term "peaceful purposes" in the 1971 Seabed Treaty may not necessarily mean "non-military purposes"; indeed, one of the traditional uses of the high seas recognized by the general principles of international law is the right of states to employ the seas for

73. For example, research in the U.S. with respect to projects such as the SABMIS (Sea-based Antiballistic Missile Intercept System) and the BMS (Ballistic Missile Ship System) would be permissible under the Treaty.

74. 1971 Seabed Treaty, *supra* note 36, at art. II. *See supra* note 26 and accompanying text.

75. *See* Barry, *supra* note 27, at 583. Mr. Barry believes that this provision represents the Treaty's greatest deficiency. "[I]t leaves the thousands of square miles of ocean floor between the coast and the 12-mile limit free of any restriction whatsoever." *Id.*

76. 1971 Seabed Treaty, *supra* note 36, at preamble.

77. *Id.* art. V.

military purposes.[78] For example, military vessels are allowed to traverse the waters of the high seas under the principle of the freedom of navigation.[79] Major powers have conducted military maneuvers, target practice and electronic reconnaissance on specific portions of the high seas, often closing off these portions to other states.[80]

General international law—with regard to military activities on the surface of the high seas—requires only that states conducting such activities show "reasonable regard" for the interests of others in the exercise of the freedoms guaranteed to them.[81]

This standard of reasonableness was incorporated in Article 2 of the 1958 Geneva Convention on the High Seas (1958 High Seas Convention). Article 2 governs a state's use of waters beyond its territorial sea. It provides in part:

> The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty. Freedom of the high seas is exercised under the conditions laid down by these articles and by other rules of international law. It comprises, *inter alia,* . . . :
>
> (1) Freedom of navigation;
>
> (2) Freedom of fishing;
>
> (3) Freedom to lay submarine cables and pipelines;
>
> (4) Freedom to fly over the high seas.
>
> These freedoms, and others which are recognized by the general principles of international law, shall be exercised by all States with reasonable regard to the interests of other States in their exercise of the freedoms of the high seas.[82]

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78. Zedalis, *Military Uses of Ocean Space and the Developing International Law of the Sea: An Analysis in the Context of Peacetime ASW,* 16 SAN DIEGO L. REV. 575, 607 (1979).

79. *Id.*

80. *Id.* at 608. *See also* Lissitzyn, *Electronic Reconnaissance from the High Seas and International Law,* 61 INT'L LAW STUD. 563, 566-68 (1980).

A proposal by the Soviet Union, supported by Albania and Bulgaria, to prevent such activities was defeated at the first United Nations Conference on the Law of the Sea in 1958. *See* U.N. Doc. A/CONF. 13/C.2/L.32 (1958); U.N. Doc. A/CONF. 13/C.2/L.40 (1958). Due to lack of support, another Soviet-led proposal at the same conference to prohibit the testing of nuclear weapons on the high seas was never put to a vote. U.N. Doc. A/CONF. 13/C.2/L.32 (1958). Instead, the member states adopted a proposal put forward by the United Kingdom to the effect that states should be free to use the high seas so long as they have reasonable regard for the interests of other states. U.N. Doc. A/CONF. 13/C.2/L.68 (1958). For a discussion of the appropriateness of atomic weapon tests in the sea, see Rao, *Legal Regulation of Maritime Military Uses,* 13 INDIAN J. INT'L L. 425, 435-36 (1973).

81. *See* Zedalis, *"Peaceful Purposes" and Other Relevant Provisions of the Revised Composite Negotiating Text: A Comparative Analysis of the Existing and the Proposed Military Regime for the High Seas,* 7 SYRAC. J. INT'L L. & COMM. 1, 16 (1979). *See also* M. McDougal & W. Burke, THE PUBLIC ORDER OF THE OCEANS 773, n.2 (1962).

82. The Geneva Convention on the High Seas, *done* Apr. 29, 1958, 13 U.S.T. 2312, 2314, T.I.A.S. No. 5200, 450 U.N.T.S. 82 (effective Sept. 30, 1962) [hereinafter cited as 1958 High Seas Convention].

In view of the 1958 High Seas Convention, and in the absence of a clear legal prohibition to the contrary, it would be legitimate and reasonable to apply the same legal principle to activity below the surface as to activity on the surface. In other words, military activity conducted below the surface of the sea should be permissible so long as states' freedoms are exercised with adequate regard for the interests of other states. In that event, the term "peaceful purposes" in the 1971 Seabed Treaty may be interpreted to mean "non-aggressive."

The view that the use of the high seas for at least some military activity is not inconsistent with international law was impliedly endorsed by the recent Draft Convention of the Ninth Session of UNCLOS III.[83] Significantly, the Draft Convention, like the 1971 Seabed Treaty, incorporates a "peaceful purposes" clause.[84]

If all of the draft articles are read together, it becomes clear that the use of the term "peaceful purposes" does not mean, and was not intended to mean, "non-military" purposes. One of the freedoms guaranteed to all states under the draft articles is the freedom of navigation.[85] This freedom is not restricted in any way; indeed, the draft articles state that "[w]arships on the highseas have complete immunity from the jurisdiction of any State other than the flag State."[86] This clearly envisages a *military* use of the high seas. Further, because foreign warships often reach the territorial sea of a coastal state by traversing a portion of the high seas, the draft articles must contemplate some use of the high seas by military vessels.[87]

The new Draft Convention does not in any way purport to restrict the traditional freedom of navigation which Article 2 of the 1958 High Seas Convention guarantees.[88] Furthermore, although the new articles do substitute a standard of "due consideration" for "reasonable regard"[89] for the interests of other states,[90] it is arguable that the substitution does not change the standard of reasonableness established under the 1958 High Seas Convention.[91] The fact that the Draft Convention of UNCLOS III is the latest pronouncement by the entire international community at a conference devoted spe-

83. Draft Convention, *supra* note 46.

84. *Id.* art. 88. The article simply states "[t]he high seas shall be reserved for peaceful purposes."

85. *Id.* art. 87(1)(a).

86. *Id.* art. 95.

87. *See* Zedalis, *supra* note 78, at 614, n.173.

88. *See supra* note 82 and accompanying text.

89. *Id.* States may exercise their freedoms "with reasonable regard to the interests of other States." 1958 High Seas Convention, *supra* note 82, at art. 2.

90. *See* Draft Convention, *supra* note 46, at art. 87(2).

91. *See* Zedalis, *supra* note 78, at 615. Mr. Zedalis argues that the new articles permit all military activities so long as they are not aggressive. *Id.*

cifically and exclusively to the law of the sea renders its endorsement of the use of the high seas for at least some military activity particularly relevant.

3. *The Permissible Range of Peaceful Underwater Activity Under the 1971 Seabed Treaty and UNCLOS III*

Assuming that the term "peaceful purposes" in the 1971 Seabed Treaty has the same meaning as does the term in the Draft Convention of UNCLOS III, then such underwater activity in the high seas as peacetime deployment of acoustic detection devices and maneuvers to practice anti-submarine warfare (ASW) should be permissible—subject to the proviso that these activities do not unreasonably interfere with the interests of other states,[92] and do not appropriate the high seas to the exclusive sovereignty of any one state.[93]

A *total* military ban such as that advocated by the Soviet Union[94] would prohibit much of such underwater activity, and thus, arguably, would thwart a coastal state's ability to protect itself. A total ban would disallow such defensive uses as the deployment of submarine detection and surveillance devices—activities of crucial importance to both superpowers.[95] In view of the technological similarities between detection and surveillance devices that are used in both military and non-military activities, a blanket ban could also hinder scientific research that would be of great benefit with respect to non-military uses of the oceans.[96]

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92. Draft Convention, *supra* note 46, at art. 87. Article 87 protects freedoms of the seas similar to those protected by Article 2 of the 1958 High Seas Convention. *See supra* note 82 and accompanying text.

93. *Id.* art. 89. Article 89 provides "[n]o state may validly purport to subject any part of the high seas to its sovereignty."

94. *See supra* notes 24-25 and accompanying text.

Favoring a total ban has propogandistic value for the Soviets. One commentator made the following observation with respect to Soviet attitudes and tactics on disarmament: "The current Soviet approach seems to be to negotiate seriously for militarily valuable limited measures of arms control while at the same time mounting a propaganda assault with intentionally unnegotiable proposals mainly in relation to general and complete disarmament." E. Brown, *supra* note 18, at 203, n.64. See also Barry, *supra* note 27, at 576-77.

95. Of particular concern to coastal states such as the U.S. was the fact that the Soviet proposals would have prohibited the construction of radar towers and other "purely passive defensive devices" such as sonars for purposes of observing and recording the movement of submarines:

> [T]he existence of submarine forces requires States to take action in self-defense, such as establishing warning systems that use the sea-bed . . . . The United States is not prepared to enter into a treaty which would throw the propriety of these systems in doubt.

Statement of U.S. delegate before the ENDC, U.N. Doc. ENDC/PV.41 (1967).

96. One way to reduce suspicion over civilian research is to internationalize it as much as possible by allowing free participation and the free sharing of the results of such research by all states. The Draft Convention established a framework for an interna-

As the eventual co-sponsors of the 1971 Seabed Treaty, the U.S. and the U.S.S.R. did appear to be aware of the related nature of the two types of research. Representatives of each nation unofficially explained that while the banned facilities did not include those for research or commercial exploitation not specifically designed for storing, testing or using weapons of mass destruction, facilities specifically designed for using such weapons would not be exempted on the ground that they could also use conventional weapons.[97] They also explained that the ban did not extend to the conduct of peaceful nuclear explosions or applications of nuclear reactors, scientific research or other non-weapon applications of nuclear energy.[98] But bottom-crawling submersibles which could navigate only when in contact with the seabed, and which were specifically designed to use nuclear weapons, would be included in the ban.[99] None of this was written into the text of the final treaty, however.

Most coastal states do appear to support the installation of "purely passive defensive" listening devices only for purposes of self-defense.[100] Coastal states should be permitted to locate such devices, but only in areas close to their coast lines. Under the regime of UNCLOS III a twenty-four-mile contiguous zone[101] is created in contrast to the twelve-mile contiguous zone of the 1958 Territorial Sea Convention.[102] Further, the twenty-four-mile contiguous zone is made part of a 200-mile exclusive economic zone, wherein the coastal state enjoys certain exclusive economic rights.[103] However,

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tional scheme to conduct scientific research and to share results of the research. Draft Convention, *supra* note 46 at arts. 143-44, 148.

97. U.N. Doc. CCD/PV.440 (1969).

98. *Id.*

99. SIPRI YEARBOOK 1969/70, *supra* note 19, at 160-61.

100. E. Young, *Arms Control and Disarmament in the Ocean,* in PACEM IN MARIBUS, *supra* note 6, at 280. *See also* statement of the Canadian delegate at the Disarmament Conference, U.N. Doc. ENDC/PV.410 (1969). A Swedish proposal in the ENDC to exclude only such defensive devices from an otherwise comprehensive military ban received wide support. U.N. Doc. ENDC/PV.422 (1969). This proposal is sensible since it would provide reasonable security for coastal areas from surprise enemy submarine movements, and at the same time it would ensure that such "passive" devices could not be used for offensive purposes.

101. Draft Convention, *supra* note 46, at art. 33, para. 2.

102. *See supra* note 26. The 1958 Territorial Sea Convention's preference for a 12-mile zone was incorporated into the 1971 Seabed Treaty. 1971 Seabed Treaty, *supra* note 36, at art. II.

103. Draft Convention, *supra* note 46, at arts. 56, 57. The economic rights include rights to explore, exploit, conserve and manage natural resources of the seabed and subsoil, as well as rights to produce energy from the water or currents of adjacent areas. *Id.* art. 56. *See also* Zedalis, *supra* note 78, at 625-29, 647. Mr. Zedalis argues that if foreign state activity (particularly ASW deployment programs) within a coastal state's contiguous or economic zone is threatening enough, then the coastal state may invoke its inherent right of self defense under Article 51 of the United Nations Charter, and take appropriate remedial measures.

foreign warships and military vessels continue to enjoy the traditional freedoms of navigation within these two zones (including the freedom to deploy "passive" or defensive underwater detection devices), subject to "due consideration" or reasonable regard for the rights of other states.

In effect, UNCLOS III extends a coastal state's contiguous zone by twelve miles and recognizes its exclusive economic zone for up to 200 miles, but does not prevent other states from navigating military vessels within either of the two zones. The 1971 Seabed Treaty does not address other states' freedoms of navigation, but presumably adheres to the "reasonable regard" formula of the 1958 High Seas Convention. The peaceable range of underwater activity is none too clear under either document.

4. The Principle of "Common Interests" and "Peaceful Uses" of the Seabed Under UNCLOS III

One may argue that the Draft Convention of UNCLOS III distinguishes between the surface of the sea and the seabed, proscribing some military activity on the sea surface and *all* military activity on the seabed. While Article 88 of the Draft Convention provides that the high seas shall be reserved for "peaceful purposes," Article 141 provides that the "Area" (*i.e.,* the sea*bed*) shall be used "*exclusively* for peaceful purposes."[104] Since the seabed thereby is given separate treatment, and activities thereon are to be "exclusively" for peaceful purposes, it may be argued that the drafters intended something more than the usual prohibition for activities on the seabed. Further, under the Draft Convention all activities in the "Area" are to be "carried out for the benefit of mankind as a whole."[105] Thus, any activity in the Area that is of exclusive military benefit to a state or a group of states, because it does not benefit mankind as a whole, would arguably be prohibited under this approach.

Such arguments are easily disputed. At the outset, it may be observed that the use of the adverb "exclusively" cannot by itself bring about a qualitative change in the use of a thing that is traditionally reserved for "peaceful purposes." Further, the phrase "exclusively for peaceful purposes" has been discussed in the various fora of the United Nations ever since the emergence of nuclear weapons following World War II.[106] The major maritime powers have consistently maintained that the term does not prohibit all mili-

104. Draft Convention, *supra* note 46, at art. 141 (emphasis added).
105. *Id.* art. 140.
106. Rao, *supra* note 80, at 450; SIPRI YEARBOOK 1969/70, *supra* note 19, at 160-61. *See also supra* notes 48-57 and accompanying text.

tary uses.[107]

In any case, if the term "exclusively for peaceful purposes" is considered within the context of the general wording of Article 141 of the Draft Convention, and if one considers Article 141 within the context of the Draft Convention as a whole, it becomes clear that the term could not have been intended to proscribe all military activity on the seabed. This is true regardless of whether the activity in question is consistent with the "common heritage of mankind" concept inherent in the Draft Convention.

Looking first at the wording of Article 141, as well as the general context of Part XI in which it appears, it should be noted that Part XI is concerned exclusively with the establishment of a regime governing the exploration and exploitation of the resources of the Area. The word "activities" throughout Part XI refers only to activities in relation to resources, not in relation to military activities.[108] It thus appears that military activities on the seabed were not intended to be included in the term "activities in the Area."

Additional confirmation of this view is found in the common heritage concept articulated in Part XI. This Part provides that "[t]he Area and its resources are the common heritage of mankind,"[109] and that "[a]ll rights in the resources of the Area are vested in mankind as a whole."[110] The common heritage concept is used exclusively in reference to the resources of the Area. Similarly, Part XI provides that "[n]o State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources, . . ."[111] This proscription against sovereignty likewise appears to be designed to apply only to the Area's resources.[112] In sum, the common heritage principle read together with the prohibition against alienation

107. The United States has maintained that the term does not automatically restrict military use of the sea unless restrictions are negotiated and embodied in specific agreements. *See* U.N. Doc. A/C.1/PV.1590 (1967). *See also supra* text accompanying note 27. For the Soviet view, see U.N. Doc. A/C.1/PV. 1592 (1967). *See also supra* text accompanying notes 24-25, 57.

108. Article 134 of the Draft Convention defines the scope of Part XI, which is the Part in which Article 141 appears. It provides that "[a]ctivities in the Area shall be governed by the provisions of this Part." Draft Convention, *supra* note 46, at art. 134, para. 5.

It may be recalled that the Informal Composite Negotiating Text of the Eighth Session of UNCLOS III provided in its corresponding definitional article, Article 133(a), that "activities in the Area" meant "all activities of exploration for, and exploitation of, the resources of the Area." U.N. Doc. A/CONF.62/WP.10/Rev.1 (1979).

109. Draft Convention, *supra* note 46, at art. 136.

110. *Id.* art. 137, para. 2.

111. *Id.* art. 137, para. 1.

112. Article 137(1) does apply to the "Area" as well. The significance of the latter provision is that military activity which permanently appropriates any part of the Area to exclusive use would be covered by the ban, whereas the ban would not cover other military activities.

and sovereign appropriation is aimed at making the resources of the Area available to all states without discrimination.[113] Part XI and Article 141 are not aimed at prohibiting "passive defensive" military activity such as the deployment of detection, surveillance and ASW devices not permanently fixed to the seabed.[114]

Further interpretive guidance for Article 141 is found in other relevant provisions of the Draft Convention. Of particular interest is the article concerning the settlement of disputes. It provides in part:

> 1. Without prejudice to the obligations arising under section 1, a State Party when signing, ratifying or otherwise expressing its consent to be bound by this Convention, or at any time thereafter, may declare that it does not accept any one or more of the procedures for the settlement of disputes specified in . . . [the Convention] with respect to one or more of the following categories of disputes:
>
> . . . .
>
> (b) Disputes concerning military activities, including military activities by government vessels and aircraft engaged in non-commercial service, and disputes concerning law enforcement activities in regard to the exercise of sovereign rights or jurisdiction excluded from the jurisdiction of a court or tribunal under Artcle 297 paragraphs 2 and 3.[115]

This provision may be construed as a continuing reminder that the great powers have regarded military activity as an important maritime activity which they have consistently sought to protect throughout the history of the law-of-the-sea debate.[116] Thus viewed, such a clause is of obvious advantage to the naval powers. One could also view the provisions as being in the interest of all coastal states, big and small, because they may feel free to regulate, restrict or even prohibit military activity in waters within their jurisdiction without fear of being called to account before any tribunal having compulsory jurisdiction.[117] The irony, however, is obvious: by removing military activities from compulsory dispute settlement pro-

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113. Article 141 specifically provides: "The Area shall be open to use exclusively for peaceful purposes by all States, whether coastal or land-locked, without discrimination and without prejudice to the other provisions of this Part." *Id.* art. 141.

114. *See* N. Javis, SEA POWER AND THE LAW OF THE SEA 85 (1976). *Cf.* Zedalis, *supra* note 78, at 662. In the words of one commentator:

> [A]ny contention that detection devices installed on the sea floor and designed to conduct surveillance of the ocean 'space' come within the ambit of the 'benefit of mankind' provision by virtue of consituting exploration of a resource is incorrect. Not only is it highly unlikely that mere observation constitutes 'exploration,' but [the Draft Convention] specifically restrict[s] the application of the provision to the *seabed* and *subsoil* and define[s] resources to mean *mineral* resources, not resources as metaphysical as space.

Id. at 657 (footnotes omitted).

115. Draft Convention, *supra* note 46, at art. 298.

116. McDougal & Burke, *supra* note 81, at 754-55.

117. Janis, *Dispute Settlement in the Law of the Sea Convention: The Military Activities Exception,* 4 OCEAN DEV. & INT'L L. 51, 52-54 (1977). *See also* Bernhardt, *Compulsory Dispute Settlement in the Law of the Sea Negotiations: A Reassessment,* 19 VA. J. INT'L L. 69, 98-99 (1978).

cedures, the Draft Convention removes the one activity that most needs a peaceful resolution.

Regardless of the merits of such a provision, its very existence as well as the implications it holds for military activity on the surface of the high seas and the deep seabed, the existence of other provisions in the Draft Convention which contemplate at least some military activity on the high seas, the general concern of Part XI with *resources* of the area and, finally, the applicability of the common heritage concept to those resources all militate against the conclusion that Article 141 of the Draft Convention prohibits all military activity on the seabed. The effect of the term "peaceful purposes" in both the 1971 Seabed Treaty and in the Draft Convention of UNCLOS III does not prohibit military use of the seabed or of the high seas. The only proscription is against "unreasonable" military activity that infringes upon other states' exercise of their maritime freedoms.

D. The Problem of Verification Under the 1971 Seabed Treaty

While the two superpowers that sponsored the 1971 Seabed Treaty currently enjoy a technological monopoly over the emplacement of nuclear weapons and other weapons of mass destruction on the seafloor,[118] the question of verification and enforcement of the ban is one that generally concerns all signatories to the Treaty, and particularly concerns the coastal states. By signing the 1971 Seabed Treaty these states agreed to refrain from activities they lacked the technology to undertake in the first place, as well as to refrain from activities which their national interests did not favor. But verification has become a question of vital national interest for all parties to the Treaty, because the emplacement of weapons of mass destruction on the seabed by any state touches the national security of all states, developed or less-developed, coastal or inland. Verification by the majority of the signatories, however, would be impossible without assistance from certain technologically advanced states.[119] Unfortunately, those same states happen to be the states most likely to emplace the prohibited weapons. Verification could therefore become a bipolar issue—with all the attendant dangers of an East versus West rivalry.

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118. W. Burke, Ocean Science, Technology and the Future International Law of the Seas 10-39 (1965). *See also* Barry, *supra* note 27, at 572; SIPRI Yearbook 1969/70, *supra* note 19, at 168.

119. The majority of the signatories to the 1971 Seabed Treaty possess little, if any, underseas technology. *See* Arms Control in Hydrospace, *supra* note 14, at 85-88.

Article III of the 1971 Seabed Treaty provides that if a party has doubts about the activities of any other party "the State Party having such doubts shall notify the other State Parties, and the Parties concerned shall cooperate on such further procedures for verification as may be agreed. . . . "[120] A state may conduct verification by "using its own means, or with the full or partial assistance of any other State Party. . . . "[121] Because only the two major powers possess the technology for meaningful verification, and since only these two powers claim to perceive the sort of worldwide interests which might lead to the emplacement of weapons of mass destruction on the seabed, the process of consultation envisaged by Article III is reduced to consultation between a less-developed party and one superpower in opposition to the other superpower. Even the ultimate right of appeal to the Security Council[122] may prove ineffective considering that all five nuclear powers hold rights to veto its action.[123]

The Treaty's provisions with respect to verification leave many questions unanswered, and fail to provide a means of resolving areas of potential conflict or disagreement. For example, attempts at verification could easily lead to charges of "interference" with legitimate national activity.[124] Article III provides that a state's seabed activities may be observed "provided that observation does not interfere with such activities."[125] Article III also provides that verification "shall not interfere with activities of other States Parties and shall be conducted with due regard for rights recognized under international law, including the freedoms of the high seas. . . . "[126] Such

120. 1971 Seabed Treaty, *supra* note 36, at art. III, para. 2.

121. *Id.* art. III, para. 5.

122. Article III provides that a State Party may, where there remains "a serious question concerning fulfillment of the obligations assumed under this Treaty," refer the matter to the Security Council. *Id.* art. II, para. 4.

123. The U.N. Charter provides that a "decision" (*i.e.,* action) of the Security Council requires "an affirmative vote of nine members *including the concurring votes of the permanent members,*" the latter being the United States, the U.S.S.R., the United Kingdom, France and China. U.N. CHARTER art. 27, para. 3. (emphasis added). The failure of any of the five permanent members to vote in favor of a given proposal would automatically "veto" the action.

124. ARMS CONTROL IN HYDROSPACE, *supra* note 14, at 85-86.

125. 1971 Seabed Treaty, *supra* note 36, at art. III, para. 4.

126. *Id.* art. III, para. 6.

The provision that verification must not interfere with the freedoms of the high seas could create further difficulties now that many states have claimed exclusive economic zones of 200 miles. The Treaty does not address whether observation outside the 12-mile zone but inside the 200-mile area is permissible, or whether this ought to be treated as "interference" with sovereign jurisdiction. Nor does the Treaty address whether objections from a coastal state to verification attempts within its 200-mile zone ought to be regarded as an infringement of the freedoms of the high seas set forth in paragraph six of Article III.

escape clauses could provide very convenient protective shields insulating dubious state activity from international scrutiny. The Treaty does not indicate how interference charges are to be dealt with, nor does it indicate the effects of such a charge if it is substantiated.

Another potential source of conflict concerns the effect of the 1958 Geneva Convention on the Continental Shelf[127] on verification activities. The Convention allows coastal states to establish safety zones of up to 500 meters around installations for the exploitation of natural resources on the seabed; safety zones which ships of all nationalities must respect.[128] If a state suspected of violating the Treaty declares the installation in question to be such a facility, it may be able to prevent direct access to it by other states seeking verification. In that event, other states may "look at" but may not "look into" the facility.

The U.S. has argued that a blanket right to look into underseas facilities is unnecessary in light of the principle of the freedoms of the high seas; a principle which permits parties to approach an area of a suspected underseas facility and study surface and underwater engineering activity, surface support platforms for the facility, and the types of equipment and material thereon.[129] Because emplacements of mass destruction weapons would require sophisticated material and equipment, special engineering facilities on the surface and other "tell-tale" signs, a direct look into the installation in question would arguably be unnecessary.[130] Whether direct access to underwater facilities for purposes of verification is necessary, unnecessary or even permissible under the Treaty is another area it does not address.

Although there may be substantial difficulties under the scheme of verification envisaged by the 1971 Seabed Treaty, verification by itself is not the major problem in any treaty limiting armaments. The real problem is whether the parties are willing to accept the obligations imposed by an arms control agreement. Nonetheless, the uncertainty of the verification provisions may cause more problems than the provisions resolve.

E. THE 1971 SEABED TREATY AND COASTAL MARITIME ZONES

Finally, the 1971 Seabed Treaty skirts the issue of demilitarization (even in the limited sense of prohibiting weapons of mass

127. 1958 Geneva Convention on the Continental Shelf, *done* Apr. 29, 1958, 15 U.S.T. 471, T.I.A.S. No. 5578, 499 U.N.T.S. 311 (1964) [hereinafter cited as Continental Shelf Convention].

128. *Id.* at art. 5, para. 3.

129. SIPRI YEARBOOK 1969/70, *supra* note 19, at 171.

130. *Id.*

destruction) of the maritime zones that fall under the traditional scheme of national waters, including the territorial sea, the contiguous zone and the continental shelf.

Customary international law dictates that national waters (*i.e.*, those maritime zones landward of the baseline of the territorial sea) are under the complete sovereignty of coastal states.[131] The 1971 Seabed Treaty does not attempt to alter this arrangement by curtailing state sovereignty in such zones. As with many of its other provisions, however, restrictions on activities in the coastal zones may be derived from sources other than the Treaty. For example, a state's absolute sovereignty over national waters, while untouched by the 1971 Seabed Treaty, may be restricted by the 1958 Territorial Sea Convention with respect to other states' rights of free passage in internal waters.[132] A state's absolute sovereignty over its national waters may also be restricted by the Nuclear Test Ban Treaty of 1963,[133] which obliges each party to refrain from carrying out nuclear test explosions "at any place under its jurisdiction or control . . . including territorial waters."[134]

The 1971 Seabed Treaty is similarly silent with respect to demilitarization of a state's territorial sea. Article II of the Treaty leaves coastal states free to emplace weapons of mass destruction within the twelve-mile coastal zones of their territorial seas. The 1958 Territorial Sea Convention provides, however, that "ships of all States whether coastal or not, shall enjoy the right of innocent passage through the territorial sea."[135] Passage is innocent so long as it is not "prejudicial to the peace, good order or security of the coastal state."[136]

Submarines, warships and other foreign military vessels would presumably enjoy a right of innocent passage, subject to the power of the coastal state "to suspend temporarily in specified areas of its territorial sea the innocent passage of foreign ships if such suspension is essential for the protection of its security."[137] There can, however, be no such suspension when states use a territorial sea strait for

131. McDougal & Burke, *supra* note 81, at 64.

132. Article 5(2) of the 1958 Territorial Sea Convention provides in part:

> Where the establishment of a straight baseline in accordance with article 4 has the effect of enclosing as internal waters areas which previously had been considered as part of the territorial sea or of the high seas, a right of innocent passage, as provided in Articles 14 to 23, shall exist in those waters.

1958 Territorial Sea Convention, *supra* note 28, at art. 5, para. 2.

133. Test Ban Treaty, *supra* note 37.

134. *Id.* art. I, para. 1(a).

135. 1958 Territorial Sea Convention, *supra* note 28, at art. 14, para. 1.

136. *Id.* art. 14, para. 5.

137. *Id.* art. 16, para. 3. Under Article 14(6), submarines must navigate on the surface and must show their flags. The articles of the Draft Convention of UNCLOS III go

international navigation.[138]

None of the above-mentioned restrictions on the rights of states over their national and territorial waters are strong enough to imply a ban on the emplacement of nuclear and mass destruction weapons in those zones.[139] As for those provisions guaranteeing innocent passage, it may be possible to locate weapons systems on the territorial seabed in such a way that they do not interfere with innocent passage, which, after all, is allowed *only on the surface*. Moreover, according to the 1958 Territorial Sea Convention, a state's obligation to allow innocent passage is limited within the as-yet-undefined outer limit of the territorial sea; the obligation does not extend over the *entire* twelve-mile contiguous zone referred to in Part II of the Convention.[140]

The 1971 Seabed Treaty is equally unsatisfactory with respect to the demilitarization of the continental shelf. Under the 1958 Geneva

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beyond Article 14(6) and enumerate specific activities that are *per se* prejudicial. Draft Convention, *supra* note 46, art. 19, para. 2.

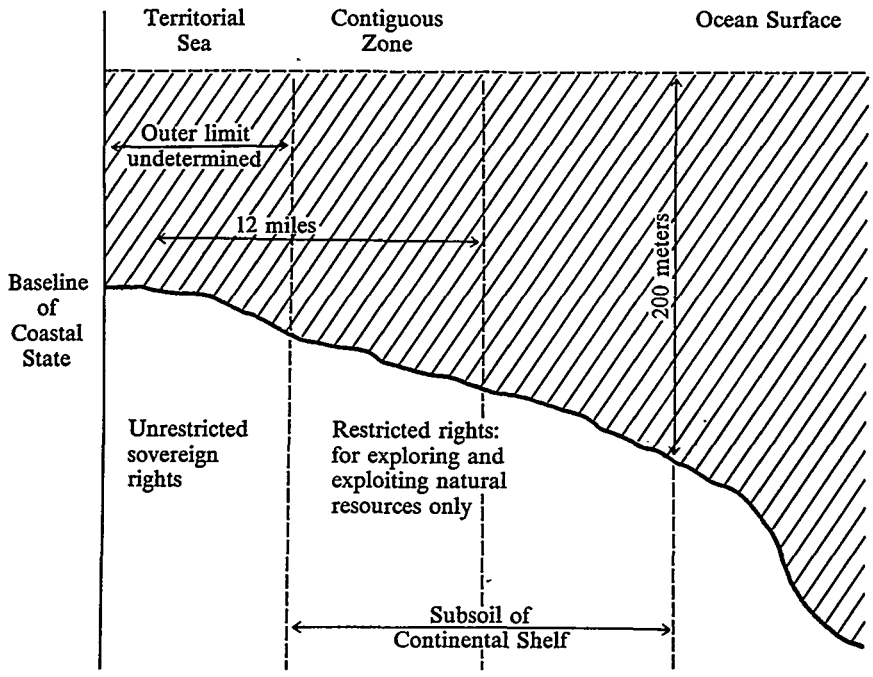
138. 1958 Territorial Sea Convention, *supra* note 28, at art. 14, para. 6. The provisions of Article 14(6) regarding submarines also would seem to apply to navigation through international straits forming part of the territorial sea. Such restrictions led the U.S. to demand the right of "free transit" rather than just "innocent passage" through international straits. In return, at the Geneva Conferences of 1959 and 1960 the U.S. indicated that it would drop its insistence on a narrow territorial sea of three miles and accept a wider limit of 12 miles. The development of Soviet naval strength and its fishing and merchant marine fleets led the U.S.S.R. to support the U.S. position on narrow territorial seas and free transit through straits. *See generally* McDougal & Burke, *supra* note 81, at 501, 504; Sulikowski, *Soviet Ocean Policy,* 3 OCEAN DEV. & INT'L L. 70-71 (1975).

139. Nor do the draft articles of UNCLOS III purport to change materially the existing regime of sovereignty; they continue to acknowledge coastal state sovereignty over national waters and the territorial sea. Draft Convention, *supra* note 46, at art. 2, para. 2. A concomitant power is the power to exclude foreign military activity in the subjacent seabed and subsoil of both zones.

140. 1958 Territorial Sea Convention, *supra* note 28, at art. 24. The diagram below illustrates the different zones and areas which the 1958 Territorial Sea Convention protects. As the diagram shows, there may be an "overlap" between a coastal state's contiguous zone and its continental shelf. In such an instance it is important to remember that the rights of the coastal state in that portion of its continental shelf falling immediately below its contiguous zone are different from those conferred to it by Article 24 of the Convention.

Convention on the Continental Shelf,[141] the term "continental shelf" refers "to the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 meters . . . ."[142] A coastal state may exercise sovereign rights over the continental shelf "for the purpose of exploring it and exploiting its natural resources."[143] Further, under the 1958 Territorial Sea Convention, the coastal state may exercise, in its contiguous zone, rights "to prevent infringement of its customs, fiscal, immigration or sanitary regulations within its territory or territorial sea," and to "punish infringement of the above regulations committed within its territory or territorial sea."[144]

Not only does the 1971 Seabed Treaty not indicate whether such distinctions are legally useful or relevant for purposes of determining the areas in which a state may or may not emplace nuclear weapons and other weapons of mass destruction, but in one broad sweep it declares that the prohibited zone "shall be coterminous with the twelve-mile outer limit of the zone referred to in Part II of the Convention on the Territorial Sea and the Contiguous Zone. . . ."[145] In



141. Continental Shelf Convention, *supra* note 127.
142. *Id.* art. 1.
143. *Id.* art. 2.
144. 1958 Territorial Sea Convention, *supra* note 28, at art. 2.
145. 1971 Seabed Treaty, *supra* note 36, at art. II. *See also* note 38 and accompanying text.

doing so it conceivably allows the splitting up of continental shelves, leaving the landward portions of these shelves (*i.e.,* those falling immediately below the contiguous zones) exempt from the ban, while including in the ban those portions of the shelves extending beyond the contiguous zones.

The 1971 Seabed Treaty's definition of the prohibited zone has two legal consequences: First, by juxtaposing two zones (the twelve-mile coastal zone and the rest of the high seas), and by prohibiting weapons of mass destruction in only the latter zone, the Treaty creates *a contrario* an implied right to emplace such weapons in the other (*i.e.,* twelve-mile coastal) zone. Second, by allowing this interpretation, the Treaty appears to lump the area of the contiguous zone and that portion (if any) of the continental shelf falling immediately below it with the territorial sea, thus creating an erroneous impression that a coastal state has complete sovereignty over the entire twelve-mile coastal zone and the seabed below it, rather than just over the territorial sea. For, what better evidence of sovereignty can be offered in respect of any given area, than a right, purportedly derived from an international legal document, to emplace nuclear weapons and other weapons of mass destruction there? Unless meaningful international opposition to such claims is effectuated, acquiescence may whet a state's appetite for more extensive claims on the high seas.[146]

It is evident that the 1971 Seabed Treaty contains numerous flaws, omissions and inadequacies. Aside from the fact that its "peaceful purposes" goal cannot mean non-military purposes,[147] it fails to address the real threat to peace in the oceans: mobile underwater strategic forces. By banning nuclear installations on the seabed the Treaty bans something that is no longer of great military significance to the strategic deterrent forces of either the U.S. or the U.S.S.R. While the existing deployment of underwater weapons systems (especially submarines) may be viewed as guaranteeing a certain peace and stability through mutual deterrence, more advanced developments could upset this precarious balance in the future.[148] An important factor in the popularity of underwater attack systems—and one which may encourage their further development in ways which could threaten the existing balance—is their relative invulnerability when compared with other surface-based systems on

146. This question is more thoroughly examined in the next section. *See infra* notes 153-57 and accompanying text.

147. *See supra* notes 56-62 & 67-77 and accompanying text.

148. *See* Zedalis, *supra* note 81, at 3.

land, on the sea surface or on the seabed.[149]

Because the 1971 Seabed Treaty permits mobile underwater weapons systems and the placement on the seabed of installations servicing such systems, and because it fails to restrict the activities of coastal states within their twelve-mile zones, it appears that the 1971 Seabed Treaty is not likely to contribute in any significant way to the preservation of the ocean and the ocean environment from the arms race.

F. National Appropriation of International Ocean Space: The Dilemma of the Future

One of the most urgent issues facing all those concerned with the maintenance of peace and peaceful coexistence in the oceans is the danger of national appropriation of international ocean space. No international regime for peaceful exploitation of the economic resources of the oceans currently exists, although progress appears to have been made at the latest round of negotiations of UNCLOS III.[150] Both powers, however, remain committed to improving their strategic deterrent forces.[151] Given these facts, and considering that maximum invulnerability coupled with a "second strike" capability is only assured underwater, the time is ripe for international lawyers to consider whether states owning underwater weapons systems may protect themselves by appropriating strategic areas of international ocean space under their exclusive national jurisdictions.[152]

States may find it difficult to resist making such claims if the areas in question promise tangible economic gain. The economic factor is bound to loom larger and acquire a new urgency in light of the view that, within the next twenty years, most of the earth's land-based resources and fossil fuel supplies will be exhausted.[153] Individual nations will no doubt consider investing in serious long-term economic exploitation of the oceans and, in the absence of effective

149. This invulnerability is due to (a) the mobility of underwater systems, (b) their ability to hide by blending with the ocean environment, (c) their capacity for prolonged submergence, and (d) the difficulty of detecting them because most existing detection devices do not have detection range potentials commensurate with the ocean's vast area. *See supra* text accompanying notes 15-19.

150. *See supra* notes 111-13 and accompanying text.

151. *See* R. Morse, *The Future of Sea-based Deterrence,* in THE FUTURE OF THE SEA-BASED DETERRENT 3, 5 (K. Tsipis, A. Cahn, & B. Feld eds. 1973).

152. One authority fears that competition between submarine strategic systems and efforts to locate and destroy them may lead to "an effort to assert exclusive jurisdiction over the areas of the sea or to establish identification zones analogous to those now maintained in the air." L. Martin, THE SEA IN MODERN STRATEGY 34 (1967).

153. *See* Johnson & Logue, *supra* note 8, at 44-47. Messrs. Johnson and Logue indicate that deep sea sources may compensate for the earth's dwindling supply of minerals and fuels.

international safeguards, probably will attempt to protect their investments with military forces. If smaller states obtain access to non-military underwater technology, they too may lay exclusive claims to large tracts of international ocean space in order to protect their own strategic systems from interference by commercial undertakings.[154]

The U.S. view on states' interests in the ocean floor began crystallizing as early as 1967:

> In the near future, naval warfare may be extended to the sea-bed, as nations intensify their competition for resources and strategic positions on the ocean floor. These vast areas beyond the Continental Shelves are now, by International Law, accessible to any nation with the technology to establish and maintain sovereignty over its sea-bed.[155]

While this statement does not amount to an official declaration of intent to unilaterally appropriate those parts of the seabed and ocean floor of strategic value to the U.S., it does constitute a candid admission, at the official level, that nations' interests in the oceans are growing, that states are going to "compete" for access to the economic resources of the seabed as well as for strategic positions thereon, and that this competition could lead to war on the high seas conducted from the seabed rather than on the sea surface.

Coupled with this prognosis is the view that international ocean space is legally "accessible" to any nation possessing the technology to establish and maintain sovereignty over its sea-bed. The U.S. does not define this legal right of access; it could be construed to refer to nothing more innocuous than the use of the ocean space for peaceful trade or for civilian transport. The context and general tenor of the statement suggest, however, that the U.S. views the seabed as "accessible" on a national basis for economic *and* strategic purposes. One could argue that one of the legal incidents of this right of access is the right to *protect* personnel, equipment and other resources expended in pursuit of that right. This would necessarily involve an extension of national sovereignty beyond the limits of national jurisdiction into what is now regarded as international

154. *See* W. Nierenberg, *Militarized Oceans,* in UNLESS PEACE COMES 119, 119-20 (N. Colder ed. 1968). The different commercial undertakings involved include fisheries, mineral extraction, and ocean facilities for weather prediction and control. If these commercial undertakings are of an exclusively national (as opposed to an international) character, they may exacerbate interstate rivalries and goad states into being more protectionist in order to insulate their strategic and economic sea-borne programs from the prying eyes of neighboring or rival states.

155. Interagency Committee on Oceanography, Pamphlet No. 24 at 1 (March 1966), *quoted in* ARMS CONTROL IN HYDROSPACE, *supra* note 14, at 16. *See also* Stoever, *The "Race" for the Seabed: The Right to Emplace Military Installations on the Deep Ocean Floor,* 4 INT'L LAW. 560, 563 (1970).

ocean space.[156]

The failure of the 1971 Seabed Treaty to restrict state activity on the surface and in subjacent waters of coastal zones creates a dangerous precedent allowing states to emplace weapons of mass destruction in areas which are actually part of the high seas.[157] The international community is not only aware of this possibility, but has declared its opposition to it.[158] The Draft Convention of UNCLOS

156. *See* 22 U.N. GAOR (15th mtg.) at 10, U.N. Doc. A/C.1/PV.1515 (1967).

The absence of independent Soviet sources on Soviet strategic doctrine, together with the tight controls on the flow of official information on the subject, make it impossible to reference directly Soviet thinking. Yet similarities in the world-wide security and economic power positions of the two countries, as well as certain parallels in their respective concepts of strategic parity, make the danger of Soviet appropriation of international ocean space equally real.

157. *See supra* notes 74-75 and accompanying text. According to the 1958 Territorial Sea Convention, the term "high seas" includes "all parts of the sea that are not included in the territorial sea or in the internal waters of a State." 1958 Territorial Sea Convention, *supra* note 28, at art. 1. Under the regime established by UNCLOS III, "high seas" would include the contiguous zone and the 200-mile exclusive economic zone. *See supra* notes 101-03 and accompanying text.

If states do attempt to emplace weapons of mass destruction in the high seas, there will be no lack of private law analogies to provide a legal rationalization for claims to such areas. Legal scholars have been busy for the past 30 years modifying private law doctrines such as "prescription," "occupation," "effective control," "implied international recognition or acquiscence," and "historical consolidation of title" to justify exploitation of the seabed. *See generally,* R. Jennings, THE ACQUISITION OF TERRITORY IN INTERNATIONAL LAW 26-28 (1963); Lauterpacht, *Sovereignty over Submarine Areas,* 27 BRIT. Y.B. INT'L L. 376 (1950); Briggs, *Jurisdiction over the Sea Bed and Subsoil Beyond Territorial Waters,* 45 AM. J. INT'L L. 338 (1951); G. Schwarzenberger, A MANUAL OF INTERNATIONAL LAW 125-33 (1967).

158. In 1970, the U.N. General Assembly issued a *Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, Beyond the Limits of National Jurisdiction,* G.A. Res. 2749, 25 U.N. GAOR Supp. (No. 28) at 24, U.N. Doc. A/8028 (1970). Paragraph 8 of the Declaration states that:

> '[t]he area (*i.e.,* the sea-bed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction) shall be reserved exclusively for peaceful purposes, without prejudice to any measures which have been or may be agreed upon in the context of international negotiations undertaken in the field of disarmament and which may be applicable to a broader area. One or more international agreements shall be concluded as soon as possible in order to implement effectively this principle and to constitute a step towards the exclusion of the sea-bed, the ocean floor and the subsoil thereof from the arms race.

Id. at 24.

Paragraph 2 of the Declaration provides that:

> The area shall not be subject to appropriation by any means by States or persons, natural or juridical, and no State shall claim or exercise sovereignty or sovereign rights over any part thereof.

Id.

In a comment on an earlier draft of the 1971 Seabed Treaty, the U.N. Committee on the Peaceful Uses of the Seabed stressed the need "to reserve the maximum possible area of the ocean floor for peaceful purposes, and consequently to use a formulation which would not convey the impression that coastal states are expected to emplace weapons where prohibition is not contemplated by the terms of the proposed draft." Report of the Committee on the Peaceful Uses of the Sea-bed and the Ocean Floor Beyond the Limits of National Jurisdiction, 24 U.N. GAOR Supp. (No. 22A) at 2-3, U.N. Doc. A/7622/Add. 1 (1969).

III did attempt to restrict states' activities in coastal zones by providing:

> No state shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources, nor shall any state or natural or juridical person, appropriate any part thereof. No such claim or exercise of sovereignty or sovereign rights, nor such appropriation shall be recognized.[159]

This provision, however, appears in Part XI of the Draft Convention of UNCLOS III. Part XI apparently relates only to the exploration and exploitation of the resources of the Area.[160] Consequently, it could be argued that the provision does not unequivocally prohibit the appropriation of the Area for *military* purposes.

II

PROBLEMS OF "PEACE" IN THE EVOLVING LAW OF OUTER SPACE

A. INTRODUCTION

Part II focuses on the law of peace in outer space. Because the development of weapons in outer space is motivated by the same considerations of strategic deterrence as the development of sea-based weapons, it is not surprising that there are remarkable similarities between the U.N. treaty law on the subject of peace in the oceans and in outer space. Similarly, the same inadequacies that beset the 1971 Seabed Treaty and the Draft Convention of UNCLOS III beset the treaties governing militarization of outer space.

Just as the pertinent treaty law on the oceans does not require complete demilitarization of the seabed or the high seas, the relevant treaties on outer space law also permit the deployment of weapons in near-earth space.[161] The beginning sections of this Part will discuss the military potential of outer space, describe the kinds of space weapons that could develop in the future and how these weapons might compare with land and sea-based weapons, and explore the possibility of a large scale militarization of outer space in light of the above conclusions.[162]

Consquently, much the same kind of analysis used in the first Part to examine the treaty law governing militarization of the sea will be used to examine the treaty law governing militarization of

159. Draft Convention, *supra* note 46, at art. 137.

160. *See supra* notes 109-14 and accompanying text.

161. *See supra* notes 67-76 & 104-17 and accompanying text.

162. For a comparison of the military and economic potential of the oceans and outer space, see *infra* text accompanying notes 181-92; for a discussion of the advantages of a *combined* sea- and space-based strike force, see *infra* text accompanying note 187.

outer space. For example, as Part I did with respect to the law of the seas, Part II will show that the proscription of nuclear weapons in space was achieved in a way that does not pose any significant setback to the strategic interests of the two superpowers.[163]

The treaty law governing the oceans and outer space attempts to reserve both areas for "peaceful purposes." Part I examined the meaning of "peaceful purposes" with reference to state practice and the context in which the term is used in particular treaties.[164] A similar approach will be used in this Part to define the meaning of "peaceful purpose" in outer space law.[165] Part II likewise examines the meaning of "peaceful purpose" with respect to purely defensive activities such as surveillance, detection[166] and verification[167] in the context of outer space law. In addition, this Part will assess the impact of the principle of man's "common heritage" on peaceful activities in outer space.[168]

The final section presents overall conclusions on the present state of the law of outer space and the oceans, projects future trends, and suggests an agenda for reform of the existing legal regimes of the high seas and outer space.

B. The Politics of Outer Space: Pertinent Soviet and American Attitudes

A remarkable combination of political developments and scientific advances culminated in the beginnings of the space age at a time in world history when the Cold War was at its peak. It is therefore not surprising that, from the launching of Sputnik I by the Soviet Union in October 1957, to the first manned landing on the moon by the United States in July 1969, and the first unmanned landing on the planet Mars by the United States in July 1977, both the Soviet Union and the United States have sought to exploit their achievements for political gain. The political ramifications of outer space exploration have colored the space activities of both powers.

For example, after its Sputnik I launching, the U.S.S.R. embarked on a concerted worldwide publicity campaign asserting that the launching proved the superiority of its political system over

163. *See infra* notes 214-19 and accompanying text.

164. *See supra* notes 48-77 and accompanying text.

165. *See infra* notes 220-23 and accompanying text.

166. *See supra* text accompanying notes 92-103 on "defensive" activity in the oceans, and *infra* notes 234-36 on "defensive" activity in outer space.

167. *See supra* text accompanying notes 118-30 on verification under the 1971 Seabed Treaty, and *infra* notes 207-14 and 233-40, on verification under the Outer Space Treaty as well as verification of activities in space generally.

168. *See infra* notes 246-63 and accompanying text.

that of the West, that its citizens could therefore expect greater benefits under that system, and that the U.S.S.R. possessed scientific, technological and military superiority over any other nation.[169] Just five weeks prior to the launching, the Soviet Union announced that it had successfully tested an Inter-Continental Ballistic Missile (ICBM).[170] Sputnik I was designed to show that the U.S.S.R. also possessed the rocket booster to launch an ICBM.[171] The subsequent launchings of Sputnik II and III[172] were used to emphasize that the U.S.S.R. possessed an ICBM booster capable of carrying heavy payloads (*i.e.,* warheads) to any point on the globe, and that the U.S.S.R. possessed a highly accurate guidance system that would enable it to target its ICBM's with pinpoint accuracy.[173]

The publicity that the Soviet Union has accorded its space effort has been rigidly controlled and selective, however.[174] For example, the Soviet press typically announced only the successful Soviet space experiments, and generally chose to disclose only those outer space activities that were nonmilitary and of no intelligence value. Present-day Soviet policies on the disclosure of activities in outer space

169. *See* Editorial, *Leading on Earth and in Space,* 9 INT'L AFF. 3, 4 (Moscow 1962).

170. A. Horelick, *The Soviet Union and the Political Uses of Outer Space,* in OUTER SPACE IN WORLD POLITICS 43, 45, 56 (J. Goldsen ed. 1963).

171. *Id.* at 52.

172. Sputnik I was soon followed by Sputnik II and III, both larger and heavier than their precursor. *Id.* at 52, 56. Sputnik II carried a dog in space and Sputnik III was large enough to accommodate a man. These satellites were injected into orbit with a high degree of precision at pre-determined altitudes.

173. *Id.* at 53. Ironically, it was at a U.N. General Assembly debate on disarmament that Khrushchev publicly announced that the U.S.S.R. was engaged in mass production of ICBM's. He indicated that the Soviet Union was producing rockets "like sausages from a sausage-machine." Statement by Khrushchev in the U.N. General Assembly, Oct. 11, 1960. 15 U.N. GAOR (900th plen. mtg.) at 646 U.N.Doc. A/PV. 900 (1960).

In January 1959, the Soviet Union launched the first of a series of three rockets to the moon, the second of which landed on the moon while the third photographed the far side of the moon and televised pictures back to earth. *See* Zhukov, *The Moon, Politics and Law,* 9 INT'L AFF. 32 (Moscow 1966). In 1961, the first manned space flights received even greater publicity than had the unmanned flights. The Soviet press hailed the Soviet cosmonauts as representatives of the "new Soviet man" and as "true sons of the Communist Party." Horelick, *supra* note 170, at 58.

Several of the Soviet achievements appear to have been timed to coincide with certain politically significant events. For example, the landing of Lunik II on the moon occurred just prior to Khrushchev's visit to the U.S., while the second Soviet-manned flight coincided with the Warsaw Pact meeting of August 1961, when the decision to close the East Berlin border was made. These events were punctuated by Soviet cosmonauts as well as by Khrushchev himself publicly upholding the missile against any actual or potential adversary. Such threats became less vociferous as the so-called "missile gap" between the U.S.S.R. and the West became neutralized by parallel developments in the United States. Horelick, *supra* note 170, at 58-59.

174. P. Kecskemeti, *Outer Space and World Peace,* in OUTER SPACE IN WORLD POLITICS, *supra* note 170, at 25, 31. *See also* Horelick, *supra* note 170, at 59-60.

remain similar.[175]

The U.S. policy on disclosure, on the other hand, is less restrictive; public announcements are made of almost all experiments, whether successful or not.[176] Further, a publicly acknowledged separation between the civilian and military aspects of the American space program[177] may be contrasted with the absence of any official acceptance by the Soviet Union of such a separation in its space program.[178]

Although the Soviet Union does publicize its military strength, it stresses that any militarization is purely defensive, implying that it is pointless to arm in preparation for war against the Soviet Union because it has no aggressive intentions. Also implicit in the Soviet approach is the warning that if it is attacked, its missile technology would enable it to more than adequately defend itself.[179] Thus, the Soviets sustain a publicity campaign which emphasizes both the

175. Until the early 1960's the Soviet Union sought to convey the impression that it had no military program of its own in space, and attempted to buttress this claim at the political level in several ways. For example, the U.S.S.R. took a public stand in favor of the "peaceful" uses of outer space, and attempted to contrast this with the allegation that U.S. policy in space was overly "aggressive." *See, e.g.,* Teplinski & Suprun, *The Missile Business in the U.S.A.,* 4 INT'L AFF. 37 (Moscow 1960). Such tactics are attributed to a Soviet program intended to discourage other countries from assisting the U.S. space effort, *e.g.,* through the provision of bases outside the U.S. for ground-tracking facilities; to provide justification for Soviet non-cooperation in the international control of space activities; and, to provide justification for the Soviets' own military space program. *See* Horelick, *supra* note 170, at 67.

176. The desire of successive U.S. administrations to foster the public sharing of information and international cooperation in space has caused tension between departments within the government. For example, in 1961 the State Department co-sponsored a resolution in the U.N. Committee on the Peaceful Uses of Outer Space calling for international cooperation in space and public disclosure of space launches. 16 U.N. GAOR Annexes, (Agenda Item 21) U.N. Doc. A/C.1/L.301 (1961). This conflicted with the Defense Department's policy of strict nondisclosure of the launching of military satellites. Kecskemeti, *supra* note 174, at 34.

177. That the U.S. Defense Department has its own space program is a matter of public knowledge.

178. Since no distinction is made in the U.S.S.R. between the military and civilian aspects of its space program there can be no interdepartmental tension within the government of the kind that occurs in the United States. *See supra* note 176. Any outward inconsistencies as may become apparent in the Soviet space program (*e.g.,* if it were to conflict with the official Soviet stance in favor of "peaceful" activities in space) are explained in terms of the dialectics of peace and war. Horelick, *supra* note 170, at 62-63.

179. In May 1962, the Soviet Union acknowledged for the first time that it was using space for military purposes: "It would be a mistake to allow any superiority whatever to the imperialist camp in the sphere [of the military uses of outer space]. It is necessary to oppose the imperialists with more effective means and methods of using space for military defense." MILITARY STRATEGY 360-61 (V. Sokolovsky ed. 1962), *quoted in* Crane, *The Beginnings of Marxist Space Jurisprudence?,* 57 AM. J. INT'L L. 615, 617 (1963). In the same year a leading Soviet authority on space law, G. Zhukov, affirmed that nothing in the U.N. Charter (regarded as applicable to outer space) prevented the use of space for self-defense under Article 51 of the Charter. G. Zhukov, *Problems of Space Law at the Present Stage,* in PROCEEDINGS OF THE FIFTH COLLOQUIUM ON THE LAW OF OUTER SPACE 20, 21 (Bulgaria 1962).

defensive nature of Soviet armaments and the allegedly "aggressive" purposes of Western arms policy.[180]

C. THE MILITARY POTENTIAL OF OUTER SPACE

The same considerations of strategic deterrence that apply to weapons in the "inner space" of the seas will apply to weapons in outer space, regardless of future trends in, and relevant attitudes towards space-based armaments. Again, the goal is maximum invulnerability of both first- and second-strike weapons systems. The technological threshold will admittedly be much higher, however, not only because of the relatively backward state of present-day space technology, but also because of the uniquely hostile space environment. The more significant goals will include the evasion of enemy radars and sensors in space, the penetration of enemy defenses, the development of targeting accuracy and appropriate codes for ground communication and control, and the ability to distinguish between bombardment and other satellites.

Even if the technological difficulties of meeting such goals are overcome, it is necessary to evaluate how space weapons would compare with other weapons, and what competitive advantage they would have over land- and sea-based weapons.[181]

For states to embark on a large-scale militarization of outer space, the space environment and space weapons systems must offer an overall strategic potential superior to that offered by land and land-based weapons or sea and sea-based weapons. If states become embroiled in an arms race in outer space, funds and research will be devoted to that effort, and programs for the military and economic exploitation of the oceans will probably be postponed or cancelled. Simultaneous research on both fronts would undoubtedly require an outlay of funds that even the superpowers would find difficult to meet.

The following quotation aptly summarizes the war/peace dialectic in Soviet armament policy:

> The appearance of the dreadful power of nuclear-ballistic weapons in the hands of socialist states, which defend the law of peace and of peaceful coexistence, guarantees the possibility in an everincreasing degree to prevent both small and large misdemeanors and crimes by the imperialist states, and this consolidates and stabilizes the entire international legal order.

M. Lazarev, *Technical Progress and Contemporary International Law,* in SOVETSKOYE GOSUDARSTVO I PRAVO, No. 12, 108 (1962) *quoted in* Crane, *supra* note 179, at 624.

180. *See* D. Rusk, *New Frontiers of Science, Space and Foreign Policy,* 42 DEP'T STATE BULL. 931, 934 (1962) for an official American criticism of Soviet political strategy in space.

181. *See* T. Schelling, *The Military Use of Outer Space: Bombardment Satellites,* in OUTER SPACE IN WORLD POLITICS, *supra* note 170, at 97, 98.

If the choice is between large-scale military research underwater and large-scale military research in outer space, the powers are likely to choose the former for two reasons. Underwater research antedates space research, and underwater research is more likely to be economically beneficial.[182] On the other hand, the space programs of both the U.S. and the U.S.S.R. provide neither superpower with a significant military advantage over the other under current technology. Additionally, these space programs exhibit little promise of immediate economic gain.[183]

Space weapons are not superior to land and sea-based weapons with respect to either their offensive "first strike" capabilities or their "second strike" retaliatory capabilities. Fixed targets on land are not necessarily more vulnerable to space weapons than they are to weapons on land or underwater. Similarly, it is unlikely that a space weapon—such as a bombardment satellite—would be effective against, for example, a deep-diving and highly mobile submarine.[184]

Even if orbital weapons systems were maintained in space, they would require complex networks for ground control.[185] Sophisticated systems to control and monitor weapons systems in space would most likely have to be located on terrestrial bases. Consquently, they would be targetable in the same way as would other land-based weapons. Considering that the military move underwater was prompted by the vulnerability of land-based systems due to more sophisticated detection devices and the increased accuracy of missiles, the vulnerability of space communications centers on land could strongly inhibit the militarization of outer space.[186]

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182. In fact, current investments in ocean research are on the threshold of yielding tremendous military and economic dividends. The known economic wealth of the oceans alone will exert a strong influence in favor of continued oceanological research. In view of the close link between underwater economic and military research, this will likely result in military spinoffs for the strategic planners of both nations. *See supra* text accompanying note 18. In addition, from a purely military standpoint the attraction of the ocean environment is strong enough by itself to spur intensified ocean research for specifically designed military goals.

183. Military research in space clearly will reap some benefits (*e.g.,* improved forecasting, better radio and telecommunications links). These improvements will, however, be minor rather than revolutionary. *But see,* A. Haley, SPACE LAW AND GOVERNMENT 1, 2 (1963).

184. *See* Schelling, *supra* note 181, at 103.

185. Such networks would control the transmission of targeting information to the systems; would command the systems from the ground to vary or change their orbits for evasive purposes; would regularly check on the systems' general efficiency and reliability; and would receive signals back from the systems in response to particular instructions from ground control. *Id.* at 100-01.

186. Although the construction of underwater space centers cannot be entirely ruled out, such a move seems unlikely for the foreseeable future for several reasons. First, neither power possesses the requisite technology; second, the cost would be prohibitive; third, the generally hostile environment of the seabed would render such construction

Space-based weapons systems nevertheless enjoy certain advantages. First, a state's space-based weapons system would constitute one more strike force in addition to land and sea-based strategic forces. The greater the diversity within a country's offensive and retaliatory forces, the greater its overall deterrent value.[187] And, just as a mobile sea-borne weapons system can be used for purposes of demonstrative posturing in crisis situations, a space weapon such as a satellite bombardment system could be deliberately positioned above a target state to demonstrate military strength.

Further, provided that the conflict did not spill over into the terrestrial realm, a war fought in outer space would have little or no repercussions on the earth's environment.[188] Also, a nation whose weapons were attacked in outer space, in order to avoid initiating a mutual destruction of civilian populations, may feel compelled to confine its counteraction to the enemy's outer space weapons.[189] Finally, a strategic war in space would involve few, if any, civilian casualties—rendering more real the possibility of limited strategic war.[190]

If the space powers move to militarize outer space and wish to utilize fully the advantages that space weaponry offers, they could deploy the following systems and weapons: orbiting nuclear and conventional bombardment satellites; communications and observation satellites to monitor the bombardment satellites or for other purposes; orbiting anti-missile and anti-satellite systems; reconnaissance

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difficult; and fourth, such centers would be detectable and targetable by deep-diving submarines.

187. Diverse offensive and retaliatory forces would complicate the coordination of an enemy's strike forces. If in addition to tracking down and destroying a highly mobile (and therefore evasive) underwater force, the enemy had to keep track of space forces which constantly varied and shifted their orbits at different points all around the globe, or which remained parked in "hidden" orbit on the far side of the moon, it would be difficult to ensure the total elimination of a rival's retaliatory force. The increased costs attributable to coping with the additional threat from space would also disadvantage the enemy.

For a futuristic but not entirely implausible description of the nature and strategy of possible "dog-fights" in space, see Willenson & Clark, *War's Fourth Dimension,* NEWSWEEK, Nov. 29, 1976, at 46.

A danger inherent in a state's ability to attack simultaneously from three points (land, sea and space) is that it may be *easier* to penetrate its defenses thanks to the over-all strain the state might suffer in accommodating its combined forces. *See* Schelling, *supra* note 181, at 103-04. Also, offensive as well as retaliatory capacity could result in a leap beyond the realm of assured destruction of the enemy to the point of "overkill." *See* Healey, *The Sputnik and Western Defense,* 34 INT'L AFF. 145, 146-47 (1958).

188. *See* Willenson & Clark, *supra* note 187, at 47, 48.

189. *Id.* It is possible, however, that although targeting may take place in space, the *launching* of the offensive missile may take place on earth. This would invite retaliation against land-based targets such as launch pads, silos, *etc.*

190. Schelling, *supra* note 181, at 101. *See also,* M. Golovine, CONFLICT IN SPACE: A PATTERN OF WAR IN A NEW DIMENSION 113, 119 (1962).

satellites; manned space stations; and, ground control facilities as well as tracking stations located all over the globe.[191]

The viability of space weapons will depend very much on their deterrence value as well as on their vulnerability to attack.[192] The existence of a satellite bombardment system *per se* would provide offensive capability as well as greater deterrent diversity. Greater deterrent diversity, as indicated above, would contribute to the overall invulnerability of the deterrent force. This, in turn, would improve first strike capability to the extent that the attacking state could expect victory following its first strike.

D. The Emergence of Treaty Law with Respect to the Demilitarization of Outer Space

Even though large scale militarization of outer space does not appear to be imminent, treaty law on the subject has evolved under the aegis of the United Nations. An examination of this treaty law is useful not only to evaluate the effectiveness of the regime it establishes, but also because an examination of this area of international law, especially when examined in the historical as well as the present context of state conduct, indicates that the drafters of the treaties did not intend completely to demilitarize outer space.

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191. Both powers have been developing anti-satellite and bombardment systems since the late 1960's. Covault, *New Soviet Anti-satellite Mission Boosts Backing for U.S. Tests,* 112 Av. Week & Space Tech., April 28, 1980, at 20. For example, the Soviet Union has been developing the Fractional Orbital Bombardment System (FOBS), as well as an anti-satellite weapon known as the directed energy weapon, capable of destroying targets by directing an intense beam of charged atomic particles. *See* S. Lay & H. Taubenfeld, The Law Relating to Activities of Man in Space 27 (1970); Robinson, *Soviets Push for Beam Weapon,* 106 Av. Week & Space Tech., May 2, 1977, at 11.

The U.S. has been developing the Multi Orbital Bombardment System (MOBS), as well as anti-satellite weapons which use laser beams. *Anti-satellite Laser Weapons Planned,* 112 Av. Week & Space Tech., June 16, 1980, at 244; Covault, *Anti-satellite Design Weapon Advances,* in *id.* at 243.

192. A variety of factors could affect a weapon's vulnerability and effectiveness. For example, reconnaissance satellites may prove useful in giving advance warning of ground troop movements, but they may prove to be of little use in providing advance warning of an impending *missile* attack, since warning of such an attack would be possible only after the missiles had been fired. K. Knorr, *The International Implications of Outer-Space Activities,* in Outer Space in World Politics, *supra* note 170, at 114, 123.

Reconnaissance vehicles could be programmed to perform an anti-satellite function against bombardment satellites, assuming that the latter can be satisfactorily identified in space. It is even possible that such vehicles could be equipped with anti-satellite missiles. Their effectiveness would again depend on the vulnerability of bombardment satellites.

It should be noted that the vulnerability of terrestrial strategic weapons is not inversely linked to the invulnerability of space weaponary; *i.e.,* increases in the invulnerability of space weaponary do not necessarily render earth weapons more targetable. The vulnerability of earth weapons depends on other independent factors such as their numbers, mobility and the effectiveness of their concealment.

1. Early Attempts Within the United Nations

The United Nations first approached the peaceful regulation of activities in outer space in November 1957, when the General Assembly adopted a resolution urging an international convention on disarmament.[193] In an attempt to preserve its missile lead, the Soviet Union opposed the General Assembly proposals and instead advanced disarmament proposals that linked outer space disarmament to terrestrial disarmament.[194] In 1958, the General Assembly attempted to establish an Ad Hoc Committee on the Peaceful Uses of Outer Space.[195] The Soviet Union again refused to participate on the ground that the membership of the Committee did not equitably represent western, socialist and neutral states.[196]

In response to the Soviet objections, the General Assembly replaced the Ad Hoc Committee with a more broadly based permanent Committee on the Peaceful Uses of Outer Space (Outer Space Committee).[197] In December 1961, the Outer Space Committee drafted a resolution which the General Assembly unanimously adopted.[198] The Resolution contained two fundamental provisions:

(a) International law, including the Charter of the United Nations, applies to outer space and celestial bodies;

(b) Outer space and celestial bodies are free for exploration and use by all States in conformity with international law and are not subject to national

193. G.A. Res. 1148 12 U.N. GAOR Supp. (No. 18) at 3, U.N. Doc. A/3805 (1957). The Resolution also recommended "[t]he joint study of an inspection system designed to ensure that the sending of objects through outer space shall be exclusively for peaceful and scientific purposes." *Id.* at 4. The General Assembly adopted the Resolution barely six days after the launching of the first Sputnik.

194. The Soviet Union's proposal specifically referred to U.S. military bases on earth. Kecskemeti, *supra* note 174, at 33. It should have been apparent that the Soviet approach would prove to be unworkable—thus leading to no agreement restricting activities in outer space. The "peaceful uses of outer space" concept nevertheless became the focal point of U.N. consideration of space matters.

195. G.A. Res. 1348 13 U.N. GAOR Supp. (No. 18) at 5, U.N. Doc. A/4090 (1958). The Committee was established in May 1959, and consisted of eighteen members.

196. H. Reis, *United Nations Committee on the Peaceful Uses of Outer Space and Its Legal Subcommittee,* in INTERNATIONAL COOPERATION IN SPACE, 217, 248-49 (1971).

The Committee nevertheless proceeded to study the matter with respect to both its scientific and legal implications. Under the latter it identified six legal problems thought to be the most urgent: (1) the question of freedom of outer space for exploration and use for peaceful purposes on the basis of equality of states; (2) liability for injury or damage caused by spacecrafts; (3) the allocation of radio frequencies; (4) the prevention of interference between spacecrafts and aircrafts; (5) the identification and registration of spacecrafts; and (6) questions respecting arrangements for the re-entry of astronauts and restitution of spacecrafts. Report of the Ad Hoc Committee, U.N. Doc. A/4141 (1959).

197. G.A. Res. 1472, (No. 16) at 5, 14 U.N. GAOR Supp. (No. 16) at 5, U.N. Doc. A/4354 (1959). The Outer Space Committee's mandate was to review the area of international cooperation in the exploration and exploitation of outer space for peaceful purposes. *Id.*

198. G.A. Res. 1721 16 U.N. GAOR Supp. (No. 17) at 6, U.N. Doc. A/5100 (1961).

appropriation.[199]

The Resolution also requested the Outer Space Committee to study measures to promote cooperation in space.[200] The Committee therefore set up two subcommittees, one on Scientific and Technical Matters, and the other on Legal Matters.[201] The Technical Subcommittee was able to recommend unanimously the publication of information of interest on national space programs to nations beginning space research.[202]

In the Legal Subcommittee, certain differences among the space powers prevented agreement. The Soviet Union pressed for a declaration of a set of general principles regulating all aspects of space activity, while the U.S. favored dealing with specific questions in the order of their importance.[203] The Soviet Union also insisted on including in the declaration the prohibition of surveillance by "spy" satellites, the use of satellites for "propaganda" and the launching of satellites by entities other than governments.[204] The U.S., on the other hand, maintained that surveillance weapons were not aggressive weapons and should not be prohibited. Further, the U.S. would not agree to prohibit the private use of commercial satellites.[205] The powers' eventual willingness to compromise was manifested by their signing the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space (1963 Resolution).[206]

The 1963 Resolution did not contain any bans on "spy" satellites, nor did it ban satellite launchings by nongovernment agencies. It did contain an enumerative list of "general" principles as the

199. *Id.*

200. *Id.*

201. U.N. Doc. A/5109 (1962). The work of the Technical Subcommittee proved easier than that of the Legal Subcommittee, a predictable reflection of the fact that clear guidelines on space policy had either not yet evolved to facilitate rule creation, or else were the subject matter of dispute between the two space powers.

202. *See* A. Frutkin & O. Anderson, *The Scientific and Technical Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space,* in INTERNATIONAL COOPERATION IN SPACE 262, 262-63 (1965).

203. Reis, *supra* note 196, at 252. The specific areas recommended for study included liability for spacecraft accidents, the recovery of spacecraft, and the rescue of astronauts.

204. *Id.*

205. *Id.* In view of these differences, the two powers failed to reach an early agreement. *See* U.N. Doc. A/5181 (1962).

206. G.A. Res. 1962 18 U.N. GAOR Supp. (No. 15) at 15, U.N. Doc. A/5515 (1963) [hereinafter cited as 1963 Resolution]. The 1963 Resolution represented a compromise between the Soviet stand in favor of a declaration of general principles and the U.S. preference for dealing with specific questions in an order of priority. The 1963 Resolution contained fairly specific provisions as well as a modified list of general principles. *See infra* text accompanying note 207.

U.S.S.R. had requested,[207] and it did address the specific questions of liability for spacecraft accidents, the recovery of spacecrafts, and questions raised by the United States regarding the rescue of astronauts.

The principles combined in the 1963 Resolution were not entirely the product of negotiations within the United Nations. Various international bodies had been active during the preceding twenty-five years to lay the foundation for the 1963 Resolution. For example, various writers had argued that terrestrial notions of sovereignty should not extend to outer space, that outer space and celestial bodies must be open to all humanity, and that neither can be subject to national appropriation.[208] The question of the liability of a launching state for damage or accidents caused by its spacecraft had also been widely discussed prior to the formulation of the 1963 Resolution.[209] Finally, even the question of the "peaceful uses" of outer space antedated the 1963 Resolution. A concern for the peaceful use of space originally arose in the context of the preservation of, and the accessibility to celestial bodies for all humanity.[210]

2. The Outer Space Treaty

Commentators aptly refer to the 1963 Resolution as the "Twelve Tables of the Law of Space."[211] In effect, the Resolution laid the foundation for the emergence of all future treaty law on

207. The principles of the 1963 Resolution established a framework for future agreements in the field of outer space law. In part, the principles declare: that outer space exploration is open to all mankind; that celestial bodies are not subject to national appropriation; that the U.N. Charter applies to all activities in outer space exploration; that the launching state and each state from whose territory a launch takes place are liable for all damage subsequently caused by the space object involved; that ownership of space objects remains in the launching state, and that such objects must be returned to the launching state on demand; that the spirit of cooperation will govern experiments in outer space; and that astronauts are envoys of mankind, thus commanding the aid of any state in the event of accident, distress or emergency landing. *See* 1963 Resolution, *supra* note 206 at 15, 16.

208. *See, e.g.,* Cheng, *Problems of Space Law,* 19 THE NEW SCIENTISTS, May, 1960, 1256, 1257 *quoted in* L. Lipson & N. Katzenbach, THE LAW OF OUTER SPACE 137 (1961); Haley, *Basic Concepts of Space Law,* 26 JET PROPULSION, Nov., 1966, 951-68, *quoted in id.* at 162; C. Jenks, THE COMMON LAW OF MANKIND 389 (1958); P. Jessup & H. Taubenfeld, CONTROLS FOR OUTER SPACE 258, 276-80 (1959).

209. *See* M. McDougal, H. Lasswell & I. Vlasic, LAW AND PUBLIC ORDER IN SPACE 613-20 (1963); Beresford, *Liability for Ground Damage Caused by Spacecraft,* 19 FED. BAR. J. 242 (July 1959); Lipson & Katzenbach, *supra* note 208, at 3, 31.

210. *See, e.g.,* O. Schacter, *Recent Technological Developments: Political and Legal Implications for the International Community,* AM. SOC. INT'L L. PROC. 245, 248 (Fifth Session 1958). *See also* E. Pepin, *Space Penetration,* in *id.* at 228, 233-34; D. Goedhuis, *Air Sovereignty and the Legal Status of Outer Space,* in INTERNATIONAL LAW ASSOCIATION 272 (Hamburg 1960); D. Goedhuis, *General Questions on the Legal Regime of Space,* in INTERNATIONAL LAW ASSOCIATION 72, 77 (Brussels 1962); Lipson & Katzenbach, *supra* note 208, at 3, 24-27.

211. C. Jenks, SPACE LAW 177 (1965).

space,[212] including the first treaty on space law: the Outer Space Treaty.[213] The Outer Space Treaty was opened for signatures in January 1967, and became effective in October 1967.

While the Outer Space Treaty restates many of the principles contained in the 1963 Resolution, it also contains several new provisions. The most important provision is found in Article IV:

> States Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.
>
> The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration of the Moon and other celestial bodies shall also not be prohibited.[214]

Article IV implies that outer space and celestial bodies are to be treated separately for purposes of demilitarization. There is no express reservation for the use of outer space "exclusively for peaceful purposes" as there is in the case of the Moon and other celestial bodies. In addition, the ban on "the establishment of military bases, installations and fortifications, the testing of any types of weapons and the conduct of military manoeuvres" applies to celestial bodies only; the ban is not extended *in haec verba* to that area of space around the earth where only nuclear weapons and other weapons of mass destruction are banned. Finally, the ban on activities on celestial bodies is more wide-ranging than that on outer space activities. The first paragraph of Article IV—dealing primarily with outer space "around the earth"—also makes references to celestial bodies; the second paragraph—dealing with the Moon and celestial bodies—makes no reference whatsoever to outer space.

In this way Article IV preserves the present state of *total* non-

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212. The 1963 Resolution led to the conclusion of a treaty on the activities of states in outer space and on celestial bodies in 1967, a treaty on the rescue of astronauts in 1968, a convention on liability in 1971, and a treaty governing the activities of states on the moon and other celestial bodies in 1979.

213. Outer Space Treaty, *supra* note 50.

Two space events occurred in the years following the 1963 Resolution which led to the emergence of the first treaty on space law. The first was the soft-landing of the Soviet Union's Luna 9 in February 1966. The second was President Johnson's declaration, in May 1966, that the U.S. was prepared to conclude an international convention on the general principles governing the activities of states in outer space. Ries, *supra* note 196, at 225. These events prompted the negotiations between the two powers that led to the formulation of the Outer Space Treaty.

214. Outer Space Treaty, *supra* note 50, at art. IV.

militarization of celestial bodies,[215] while it requires only *partial* demilitarization of circumterrestrial space. It is possible to argue that because the Outer Space Treaty only prohibits nuclear weapons and other weapons of mass destruction in circumterrestrial space, it should permit the deployment of conventional weapons, including non-nuclear anti-satellite weapons in that area.[216] In that event there would be no way of verifying whether, for example, an anti-satellite system, purported to be non-nuclear, was not actually equipped with nuclear weapons.[217]

The machinery of inspection that Article XII of the Outer Space Treaty describes further emphasizes the dichotimization of treatment of outer space and celestial bodies. It provides: "All stations, installations, equipment and space vehicles on the Moon and other celestial bodies shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity. . . ."[218] Thus, verification is permitted only where total non-militarization is prescribed; *i.e.,* on celestial bodies but not in outer space, nor, for that matter, on earth-based centers.[219] Significantly, the Outer Space Treaty does not provide for verification *at all* with respect to its ban on nuclear and mass destruction weapons under Article IV.

E. Questions Arising Under the Outer Space Treaty

The two principal loopholes in the Outer Space Treaty concern its allowance of some militarization of near-earth space, and the fact that verification under it is possible only with respect to celestial bodies but not with respect to circumterrestrial space. These loopholes raise questions as to the precise extent of the scope of the Treaty's prohibitions. The following sections examine such questions with a view towards clarifying exactly what the Treaty prohibits, as well as what it permits.

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215. *Cf.* Zedalis, *Will Article III of the Moon Treaty Improve Existing Law?: A Textual Analysis,* 5 SUFFOLK TRANSNAT'L L.J. 53 (1980). Mr. Zedalis argues that Article IV(1) could be read as not prohibiting the installation of nuclear and non-destruction weapons on celestial bodies if such an installation was only on a *temporary* basis. *Id.* at 57.

216. *See* D. Goedhuis, *Some Legal Problems Arising From the Utilization of Outer Space,* in INTERNATIONAL LAW ASSOCIATION 422, 426 (The Hague 1970). Mr. Goedhuis points out that this need not cause surprise, since in the present power structure the security interests of a state take precedence over any other interests. *Id.*

217. *See generally* Zedalis & Wade, *Anti-satellite Weapons and the Outer Space Treaty of 1967,* 8 CALIF. W. INT'L L.J. 454, 459 (1978).

218. Outer Space Treaty, *supra* note 50, at art. XII.

219. *See* N. Poulantzas, *The Outer Space Treaty of Jan. 27, 1967 and its Aftermath,* in TENTH COLLOQUIM ON THE LAW OF OUTER SPACE 209, 213-14 (1967). Earth-based centers might be used for launchings, communications, tracking, *etc.*

1. Defining "Peaceful Purpose" Under the Outer Space Treaty

Within the U.N. Committee on the Peaceful Uses of Outer Space, two schools of thought have emerged regarding the legal meaning of the term "peaceful."[220] One school interprets the term as the opposite of "military," while the other maintains that "peaceful" means "non-aggressive."[221] Western states, including the U.S., have tended to favor the latter interpretation, while the Soviet Union, together with certain other members of the Outer Space Committee, favor the former.[222]

In considering the relevance of these two interpretations as applied to the Outer Space Treaty, one must bear in mind the distinction between the Treaty's treatment of outer space around the earth on the one hand, and its treatment of the moon and other celestial bodies on the other. As outlined in the previous section, the Treaty adopted different *substantive* regimes to regulate the demilitarization of each zone.[223] For this reason, the term "peaceful" cannot be applied uniformly to both areas; its meaning varies with the context in which it is used in the Treaty.

a. The Regime of Non-Militarization on and Around the Moon and Other Celestial Bodies

The Outer Space Treaty prescribes total non-militarization of activities *on* the Moon and celestial bodies, with a simultaneous injunction that these moon activities be used "exclusively for peaceful purposes."[224] In this context it is arguable that all activities *on the surface of* the Moon and other celestial bodies must be "non-military." This interpretation does not affect in any way the legal status of activities *around* celestial bodies. If the ban is construed strictly, then it only applies to surface activity and not to orbital activity. However, because the Treaty's objective is clearly the total non-militarization of celestial bodies, it is also arguable that military activity around celestial bodies would contravene the ban and conflict with the reservation of the use of celestial bodies "exclusively for peaceful purposes."[225]

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220. *See* Lipson & Katzenbach, *supra* note 208, at 25-26.

221. For further discussion, see Zedalis, *supra* note 215, at 62-63.

222. Lipson & Katzenbach, *supra* note 208, at 25-26.

223. *See supra* notes 214-218 and accompanying text.

224. Outer Space Treaty, *supra* note 50, at art. IV, para. 2.

225. One may note that the Agreement Governing the Activities of States on the Moon and other Celestial Bodies, U.N. Doc. A/AC. 105/L.113/Add. 4 (1979) *opened for signature* Dec. 18, 1979, hereinafter cited as the Moon Treaty, seeks to eliminate this difficulty. After reaffirming the use of the Moon "exclusively for peaceful purposes," the Moon Treaty provides:

To justify the view that there is to be *total* non-militarization of the moon, then, one must argue that: (a) total non-militarization has been prescribed *on* the moon; (b) the moon is to be used "exclusively for peaceful purposes"; (c) the deployment of non-mass destruction weapons in circumlunar space would not be an "exclusively peaceful" use of the moon; and, (d) such weapons make uncertain and temporary an otherwise clear and permanent regime of non-militarization on the moon.

b. The Regime of Demilitarization in Circumterrestrial Space

The language of the Outer Space Treaty indictes that it requires only *partial* non-militarization of the outer space surrounding the earth.[226] Unlike its provision with respect to celestial bodies, the Treaty does not reserve this circumterrestrial space for "peaceful uses." There are, however, references in the preamble to the effect that the peaceful use of outer space is in the common interest of all mankind and is conducive to international cooperation.[227] The Outer Space Treaty further provides that Parties "shall carry on activities in the exploration and use of outer space, including the

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3. States Parties shall not place in orbit around or other trajectory to or around the moon objects carrying nuclear weapons or any other kinds of weapons of mass destruction or place or use such weapons on or in the moon.

4. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on the moon shall be forbidden . . .

Id. art. III.

The Moon Treaty does not completely overcome the aforementioned difficulty. Paragraph 3 of Article III prohibits nuclear and mass destruction weapons *on* and *around* the moon. Paragraph 4 prohibits all other weapons, installations, *etc.* "*on* the Moon." (emphasis provided). It does not expressly prohibit deployment of conventional and non-mass destruction weapons *around* the moon. Thus both the Outer Space Treaty and the Moon Treaty maintain a peculiar silence on circumlunar activity involving non-nuclear and non-mass destruction weapons. *See generally,* Zedalis, *supra* note 215, at 56-61.

Although the verification clause of the Moon Treaty is an improvement over the verification clause of the Outer Space Treaty, it still appears to restrict inspection to only those vehicles, stations, *etc.,* that are "*on* the moon." Moon Treaty, *supra* at art. XV. (emphasis provided). The more positive advances in Article XV are (1) that inspection is not based on reciprocity; (2) that a request for consultation creates a binding obligation on the party receiving the request to enter into consultation with the party requesting it; (3) that any party may participate in the consultation; and, (4) that any party may unilaterally seek the "assistance" of the Secretary General "in order to resolve the controversy." *Id.* art. XV, para. 3. The Secretary General does not, however, enjoy an express power to compel a settlement.

226. *See supra* notes 214-17 and accompanying text.

227. Outer Space Treaty, *supra* note 50, at preamble. The Preamble provides in part:

The States Parties to this Treaty,

. . .

[Recognize] the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes, [and]

. . .

Moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and understanding."[228]

It would not be unreasonable, therefore, to deduce that the parties intended all outer space activity—including that around the earth—to be "peaceful." Yet, as stated before, the meaning of the term "peaceful" in any specific case depends on the context in which it is used. Under the Outer Space Treaty, outer space activity may not contravene any norm of international law in general, or the provisions of the U.N. Charter in particular.[229] Further, the activities cannot include the placement of nuclear weapons and other weapons of mass destruction in outer space.[230] If one proceeds on the principle that what is not expressly prohibited by the Outer Space Treaty is permitted by it, the permitted activity must at least be consistent with the U.N. Charter and general international law. In the context of the U.N. Charter and international law the term "peaceful" generally means the opposite of "aggressive."[231] Under this interpretation, any activity which does not constitute an attack upon or threat against the territorial integrity and independence of another state would be permissible under the Treaty.[232]

Consequently, if the term "peaceful" is interpreted to mean "non-aggressive" and not "non-military," then the Outer Space Treaty should permit all defensive military activity that is not aggressive, including the development of orbital weapons systems.[233] Only this interpretation is consonant with the Treaty's consistent policy of maintaining a separation between the armament regimes of circumterrestrial space and of celestial bodies.[234]

[Desire] to contribute to broad international cooperation in the scientific as well as the legal aspects of the exploration and use of outer space for peaceful purposes.

Id.

228. *Id.* art. III.

229. *Id.*

230. *Id.* art. IV.

231. Lipson & Katzenbach, *supra* note 208, at 25. *See also* E. Galloway, *Interpreting the Treaty on Outer Space,* in PROCEEDINGS OF THE TENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 143, 145 (1967); A. Meyer, *Interpretation of the Term "Peaceful" in the Light of the Space Treaty,* in PROCEEDINGS OF THE ELEVENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 24, 27 (1968).

232. Lipson & Katzenbach, *supra* note 208, at 25-26. *See also* N. Kittrie, *"Aggressive" Uses of Space Vehicles—the Remedies in International Law,* in PROCEEDINGS OF THE FOURTH COLLOQUIUM ON THE LAW OF OUTER SPACE 1, 203-04 (1961).

233. For example, if "peaceful" means "non-aggressive," then the Outer Space Treaty would permit the use of space objects and stations for military communications and strategic reconnaissance.

234. At the expense of repetition it is worth summarizing the evidence of this separation in the Outer Space Treaty: (1) that the phrase "exclusively for peaceful purposes"

2. Surveillance and Verification

It is unlikely that the space powers would accept a non-militarization treaty that infringes on a state's traditional right to monitor threats to its own security. Certain purely passive defensive devices, such as sensors and listening devices, which cannot themselves be used as attack weapons, should be allowed on the surface of celestial bodies or in orbit.[235] Should the defensive listening and monitoring devices disclose a contravention of the Outer Space Treaty's ban on militarization in a manner that threatens a state's security, then, depending on the magnitude, urgency or seriousness of the threat, all the remedies of self-defense available under international customary law should become available to the threatened state regardless of the ban.[236]

Unfortunately, the Outer Space Treaty does not approach the problem of verification with the boldness with which it approaches the non-militarization of celestial bodies. Article XII of the Treaty represents the timid approach characteristic of all international inspection schemes. It is consensual and reciprocal: "All stations, installations, equipment and space vehicles on the Moon and other celestial bodies shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity. . . ."[237]

Even if the term "on the Moon and other celestial bodies" is interpreted to include all stations, installations and equipment in orbit *around* the moon and celestial bodies, the verification arrangements of the Treaty do not measure up to the standard required by

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which appears in Article IV(2) (dealing with celestial bodies) does not figure anywhere in Article IV(1) (dealing primarily with outer space around the earth); (2) that the wording of the ban in Article IV(2) was not used in Article IV(1); (3) that the ban under Article IV(2) is more wide-ranging than that under Article IV(1) because the ban under the latter was *expressly* extended to celestial bodies while the more comprehensive ban under the former was not extended to near-earth space; and (4) that the machinery for inspection under Article XII was made applicable only to activities on celestial bodies (including the Moon) and not to activities in outer space around the earth. *See supra* notes 214-18 and accompanying text.

235. *See* Lay & Taubenfeld, *supra* note 191, at 187, n.30. The Outer Space Treaty would permit defensive attack weapons if it were not for the comprehensive ban under Article IV(2). *Cf.* Poulantzas, *supra* note 219, at 210. Mr. Poulantzas argues that an activity is peaceful if it is "non-armed."

236. *See* Zedalis, *supra* note 215, at 69-71. Self-defense can occur, however, only after a state contravenes the ban.

It may be that this right is illusory in view of the distances involved between the earth and celestial bodies. If the treaty-breaking state has already installed attack weapons it may be too late for a threatened state to take defensive measures should the other decide to act aggressively. By the same token, however, the aggressor would have to contend with the same distances in making its preparations. Effective international surveillance and verification arrangements would arguably be able to detect such aggressive preparations on earth.

237. Outer Space Treaty, *supra* note 50, at art. XII.

the far-reaching "exclusively for peaceful purposes" ban in Article IV.[238]

The Outer Space Treaty, therefore, forces states to develop what means they can at the national level to monitor rival parties' compliance with the Treaty. The same situation has existed with respect to other treaties. For example, after the signing of the Nuclear Test Ban Treaty,[239] nuclear radiation and blast sensing devices were developed which define with surprising accuracy where a blast took place, what yield was used, and in the case of an atmospheric test, what materials were used.[240] As early as 1960, the U.S. launched satellite surveillance systems such as MIDAS (Missile Defense Alarm System) and SAMOS (Satellite and Missile Observation System).[241] These systems were designed to trace enemy missile bases on earth as well as to provide early warning of a missile attack after the launching of the missile-carrying rockets.[242] Similarly, the U.S. developed orbital inspection and control systems within satellites with optical, radar, infra-red, ultra-violet, and other sensing devices which are not only able to pin-point locations of factories or launch complexes, but which can also indicate the build-up and range of activities at such factories and complexes.[243] Furthermore, the space powers have been developing vast networks of land-based sensing devices that work in conjunction with earth orbiting satellites, making it almost impossible to launch any type of orbital payload or to conduct any underground blasts without detection.[244]

Since the militarization of celestial bodies has not yet occurred, the scope of future militarization is pure conjecture. It is clear, however, that the most effective guarantee for a ban on militarization under the Outer Space Treaty will be bilateral and multilateral verification arrangements. In the absence of a strong scheme for the

238. *See supra* text accompanying notes 218-20.

239. Test Ban Treaty, *supra* note 37.

240. P. Klass, *Secret Sentries in Space* 185-87 (1971). These highly sensitive nuclear sensing devices carried aboard Vela satellites policed the Test Ban Treaty throughout the late 1960's. Although the Vela series of launches ended in 1970, Vela-type sensing devices are still carried aboard early warning system satellites. *See also* L. Meeker, *Observations in Space,* in LAW AND POLITICS IN SPACE 75-84 (M. Cohen ed. 1964); Lay & Taubenfeld, *supra* note 191, at 103-14; J. Morenoff, *World Peace Through Space Law* 60-66 & 70-71 (1967).

241. Lay & Taubenfeld, *supra* note 191, at 32.

242. *Id.*

243. Klass, *supra* note 240, at 145-46.

Despite the non-availability of Soviet sources on such matters, the Soviet Union has publicly intimated that it too has launched "spy" satellites. Morenoff, *supra* note 240, at 65-66. *See also* W. Hyman, MAGNA CARTA OF SPACE 127, 145 (1966).

244. *See* H. Shiffer & P. Snyders, *The Need for Enforcement for International Space Treaties,* in PROCEEDINGS OF THE TENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 237, 238 (1967).

international verification of activities in outer space, it is likely that the aforementioned devices will continue to be developed at the national level.[245]

3. The Principle of "Common Interests" and "Peaceful Uses"

a. The Meaning of "Common Interests"

Article I of the Outer Space Treaty provides that "[t]he exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic and scientific development, and shall be the province of all mankind."[246] One may argue that Article I converts the principle of the use of outer space for "the interests of all countries" into a legal norm.[247] In that event, Article I forbids any activity in outer space that is not a use in the interest of all countries.[248] Since defensive military activity in space by a state to protect its own security would not be a use in the interest of *all* states, it would be unlawful.

There are several objections to this argument. First, it ignores the legislative history of the principle of the use of outer space for the benefit of all mankind. Since the early days of space activity the non-space powers have been concerned that the space powers may appropriate space for their own benefit, and might even use it to the detriment of non-space powers.[249] For this reason the Outer Space Committee used expressions such as the "common interest of man-

245. The immediacy of this problem prompted the Committee on the Peaceful Uses of Outer Space to recommend that its Legal Subcommittee consider the legal implications of remote sensing of the earth from space as a matter of "high priority." Report of the Committee on the Peaceful Uses of Outer Space, 32 U.N. GAOR, Supp. (No. 20) at 8, U.N. Doc. A/32/20 (1977). Other matters of high priority included the question of a draft treaty relating to the Moon and the elaboration of principles governing the use of satellites for direct television broadcasting. *See* Report of the Scientific and Technical Subcommittee on Remote Sensing of the Earth from Space, in *id.* at 8-11. The Subcommittee's report does not, however, broach the subject of military surveillance from space. *See generally* Polter, *Remote Sensing and State Sovereignty,* 4 J. SPACE L. 99 (Fall 1976). The following year the Subcommittee presented a set of draft principles on remote sensing. Report of the Legal Subcommittee to the Committee on the Peaceful Uses of Outer Space. 33 U.N. GAOR Annex III at 2, U.N. Doc. A/AC.105/218 (1978).

246. Outer Space Treaty, *supra* note 50, at art. I, para. 1.

247. *See* Markoff, *Disarmament and "Peaceful Purposes" Provisions in the 1967 Outer Space Treaty,* 4 J. SPACE L. 3, 5-7 (Spring 1976). *See also* G. Gál, SPACE LAW 164-72 (1969); M. Markov, *Against the So-Called Broader Interpretation of the Term "Peaceful" in International Law,* in PROCEEDINGS OF THE ELEVENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 73, 75 (1968); M. Nicia, *What is the Meaning of the Use of Cosmos Exclusively For Peaceful Purposes?,* in PROCEEDINGS OF THE SEVENTEENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 224 (1974); M. Lachs, THE LAW OF OUTER SPACE 105-09 (1972).

248. Zedalis & Wade, *supra* note 217, at 472-73.

249. Lipson & Katzenbach, *supra* note 208, at 27.

kind," and the "use of outer space for the benefit of all countries," to indicate that space and celestial bodies should be open to all states on a basis of "equality." The Committee also stated that space activity should be for "purely scientific purposes" to emphasize the non-discriminatory use of space. In sum, one space power was not to use outer space against the other, nor was either power to use outer space against the interests of non-space powers.[250]

The "common interest" principle has been used consistently over the past two decades for the following reasons:

(1) to emphasize the formal equality of all states in decisionmaking in space and to ensure their participation in delimiting international rules governing space activity;

(2) to ensure that space and celestial bodies should not be open to national appropriation;[251]

(3) to ensure free, non-discriminatory and equal access to space and celestial bodies by all states; and,

(4) to ensure that space activity is at least not prejudicial to the national interests of non-space powers.

If Article I is read in view of the above purposes of the "common interest" principle, its reference to this principle is not startling. The Article provides in full:

> The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of mankind.
>
> Outer space, including the Moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

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250. L. Lipson and N. Katzenbach, two noted commentators on space law, also note the fear of the small states "that the two space powers might act immoderately with regard to each other, or might do things in space which non-space powers regard as inimical to their interests." Lipson & Katzenbach, *supra* note 208, at 27. The writers comment:

> Hence their [*i.e.*, the small states'] emphasis on a legal regime which insists that uses of space be 'peaceful,' that space powers act 'reasonably,' that due regard be given to principles of 'equality,' and so forth. While they do not appear to desire a regime that would allow to each . . . state an unqualified veto . . ., neither would they wholeheartedly approve a regime that authorized the space powers to decide unilaterally (or even, conceivably, bilaterally) what was permissible.

Id. (footnote omitted).

251. One General Assembly Resolution has urged "the joint study of an inspection system designed to ensure that the sending of objects through outer space shall be exclusively for peaceful scientific purposes." G.A. Res. 1148, 12 U.N. GAOR Supp. (No. 18) at 3, U.N. Doc. A/3805 (1957). *See also* G.A. Res. 1721, 16 U.N. GAOR Supp. (No. 17) at 6, U.N. Doc. A/5100 (1961); G.A. Res. 1802, 17 U.N. GAOR Supp. (No. 17) at 5, U.N. Doc. A/5127 (1962); G.A. Res. 1962, 18 U.N. GAOR Supp. (No. 15) at 15, U.N. Doc. A/5515 (1963); *and* G.A. Res. 1963, 18 U.N. GAOR Supp. (No. 15) at 16, U.N. Doc. A/5515 (1963). Each of these resolutions emphasizes the theme of the "common interest" of mankind in space activity on the basis of equality and the non-appropriation of space and celestial bodies.

> There shall be freedom of scientific investigation in outer space, including the Moon and other celestial bodies, and States shall facilitate and encourage international cooperation in such investigation.[252]

Article I can be viewed as a reaffirmation by the parties of the traditional principles of equality, free access, non-discrimination and non-appropriation. There is nothing in the Article that indicates that a particular activity would be unlawful if it was not specifically designed to be of general *benefit* to the world, or is not designed to benefit the interests of *all* countries.[253]

Adopting the argument that defensive activity in outer space is unlawful under the Outer Space Treaty because it would not be "for the benefit and in the interest of all countries" would lead to several consequences. First, it would ignore the express meaning of Article IV which, as explained above, does not permit the equating of "peaceful" with "non-military."[254] In fact, during the negotiations preceeding the emergence of the final draft of the Outer Space Treaty, the Outer Space Committee rejected a proposal that the term "exclusively for peaceful purposes" be extended to all outer space areas.[255] Second, too liberal a use of the "common interests" argument would severely limit pioneering space activity even in the non-military field if the activity were of no direct benefit to, or not in the interests of, all countries.[256] Third, the above argument leads to the rather short-sighted conclusion that even non-aggressive space projects which lead to measurable benefits to a specific country or group of countries cannot coexist with projects of general benefit to

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252. Outer Space Treaty, *supra* note 50, at art. I.

253. The Soviet Union has always resisted the argument that the "common heritage of mankind" principle, paraphrased in Article I, imports legally binding obligations. The Soviet commentator B. Dudakov, for example, points out that it is too early to speculate about the common sharing of profits arising from space activity because space activity has not yet reached that stage. Attempts to define this principle would, in his opinion, be analogous to an attempt "to sell the bearskin before someone has caught the bear." B. Dudakov, *The Outer Space Treaty and Subsequent Scientific Development of International Space Law,* in PROCEEDINGS OF THE SEVENTEENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 107, 108 (1974). Dudakov maintains that the specific rights and interests of the community of states, as well as their obligations, can arise only through "special agreements" between those states. *Id.* at 111. *See also* R. Dekanozov, *Juridical Nature of Outer Space, Including the Moon and Other Celestial Bodies,* in *id.* at 200.

254. *See supra* notes 214-16, 220-34 and accompanying text.

255. *See* 21 U.N. GAOR C.2 (66th mtg.) at 6-7, U.N. Doc. A/AC 105/C.2/SR.66 (1966). Another proposal to introduce the term "use for peaceful purposes" into the text of Article 1 also failed. *See* 21 U.N. GAOR C.2 (65 mtg.) at 9, U.N. Doc. A/AC 105/C.2/SR:63 (1966). Finally, an attempt to include the term in the title on the Treaty failed as well. *See* 21 U.N. GAOR c.2 (65 mtg.) at 9, U.N. Doc. A/AC 105/C.2/SR.

256. The innumerable difficulties of defining what is a "benefit" and what is an "interest" would also present problems. Whether activities such as the launching of the world's first Sputnik, or the manned and unmanned lunar and Martian landings, or the launching of dogs, rats and spiders in space "benefit" all countries and advance their "interests" is questionable.

all states. Neither Article IV nor the Treaty as a whole forbids specific non-aggressive projects for the benefit of individual countries on the ground that they do not benefit other countries as well.[257]

b. "Common Interests" with Respect to Military Uses

The argument that *all* activity in space must be non-military would not be consonant with current space power practice.[258] The military dimension of the U.S. space program is a matter of public knowledge. While the Soviet Union refuses to acknowledge officially any military activity in space,[259] there can be no doubt that it is

257. *See* D. Goedhuis, *supra* note 216, at 440. *See also* Fasan, *The Meaning of the Term "Mankind" in Space Legal Language,* 2 J. SPACE L. 125 (Fall 1974). Although Mr. Fasan argues that the term "mankind" has emerged as a new legal concept, he does not attempt to explain what kinds of space activities are in the "interest of mankind" or for its "benefit," nor does he offer any guide for measuring "interest" or "benefit." For a more detailed outline of the uncertainties of the "benefit and interest" clause, see S. Gorove, *Limitations on the Principle of Freedom of Exploration and Use in the Outer Space Treaty: Benefit and Interests,* in PROCEEDINGS OF THE THIRTEENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 74 (1970).

In reference to the "common use" principle, the Soviet commentator Zhukov observes:

> Since all states are sovereign and equal, outer space is open and free for the exploration and use by all states without discrimination of any kind and on a basis of complete equality. Granting the right to all states freely to explore and use outer space is not confined to recognition of their specific rights. It also means the assumption of certain obligations on their part . . . that the states will not hamper one another in their space research. In other words, they must respect one another's rights and interests in outer space and on celestial bodies.

G. Zhukov, *Fundamental Principles of Space Law,* in CONTEMPORARY INTERNATIONAL LAW 263, 267-68 (B. Tunkin ed. 1969). A nearly identical passage appears in the 1976 Soviet book on space law, INTERNATIONAL SPACE LAW (A. Piradov ed. 1976).

By emphasing the principles of equality, non-discrimination and the use of space in ways not prejudicial to the interests of other states engaged in space exploration, Zhukov's interpretation is consistent with the interpretation suggested by the present writer. For a parallel U.S. view, see U.S. Representative Plimpton's statement before the U.N. Outer Space Committee on March 19, 1962, *reprinted in* 46 DEP'T STATE BULL. 809 (1962).

258. *See supra* notes 187-92 and accompanying text.

259. In 1960 the Soviet Union seemed to have terminated its vigorous opposition to "espionage" satellites. *See* Zhukov, *Space Espionage Plans and International Law,* 36 INT'L AFF. 53, 53 (Moscow 1960); Korovin, *Peaceful Cooperation in Space,* 38 INT'L AFF. 61, 63 (Moscow 1962). *See also* Zedalis & Wade, *supra* note 217, at 476.

In November 1963, the Soviet Union made another major concession by dropping its long-standing opposition to space vehicles equipped with photographic equipment. Horelick, *supra* note 170, at 69. Then, in 1964, the Soviet Union tacitly admitted its use of surveillance satellites. Times Herald, May 30, 1964 at A1, col. 5. In the article reporting the admission, Khrushchev urged that U.S. aerial reconnaissance flights over Cuba be discontinued. He is reported to have offered to show Soviet satellite photographs of the U.S. to President Johnson to prove that the U.S. could take such photographs of Cuba through its own satellites, instead of conducting aerial reconnaissance over Cuba. *Id.*

Recent Soviet writing, while not expressly endorsing such practice, refrains from criticizing it. *See generally* INTERNATIONAL SPACE LAW (A. Piradow ed. 1976). In their examination of the fundamental principles of space law, the various Russian authors fail to mention surveillance satellites.

engaged in such activity.[260] According to American reports both powers have been conducting anti-satellite tests since the 1960's,[261] and the U.S.S.R. is reported to have developed a "hunter-killer" anti-satellite system which can intercept and destroy satellites in space.[262]

Finally, there are indications, in the post-1967 era, that even the Soviet Union publicly supports the view that not every military activity in space is unlawful. The Soviet Union has not, for example, interpreted the common interests principle or Article I of the Space Treaty in a way that prohibits all military activity in outer space.[263]

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260. *See, e.g.,* Robinson, *Soviets Push for Beam Weapon,* 109 AV. WEEK & SPACE TECH. May 2, 1977, at 16; Newsweek, Nov. 29, 1976, at 46.

261. Several arguments can be given to justify the space powers' current use of reconnaissance satellites. In the absence of compulsory international inspection, space reconnaissance is the only available confidence-building mechanism that can allay mutual fears of surprise attack and other treaty violations. Also, reconnaissance may be considered a peaceful activity in that it is non-agressive. Lay & Taubenfeld, *supra* note 191, at 78. Even if reconnaisance infringes upon the laws of national states, it is not an international crime. In any case, reconnaissance satellites orbit in a zone beyond the reach of national/municipal law so that their operation is literally "above the law." *See* McMahon, *Legal Aspects of Outer Space,* 38 BRIT. Y.B. INT'L L. 339, 367-69 & 380 (1962); M. Vazquez, COSMIC INTERNATIONAL LAW 165-71 (1965). Mr Vazquez argues that because satellite reconnaissance takes place *outside* municipal jurisdiction it is inappropriate to compare it to aerial reconnaissance via conventional aircraft, which, he argues, is illegal if it violates national airspace. *Id.* at 168. Vazquez further maintains that in an age when radio waves from different countries constantly invade other countries' airspace, satellite photography should be even less objectionable because it does not involve the transmission of any waves into territorial airspace; the satellite camera merely collects or receives light waves from the ground. *Id.* at 171. *Cf.* Gály *supra* note 247, at 178.

262. N.Y. Times, Oct. 5, 1977 at A11, col. 4; Covault, *supra* note 190, at 20.

It is likely that the Soviet Union, as a space power, has launched satellites for purposes of surveillance, military communication and intelligence-gathering. In April 1980 the Soviet Union was reported to have launched at least four surveillance satellites (Cosmos 1172, 1173, 1176 and 1177). *Soviets Launch Surveillance Spacecraft,* 112 AV. WEEK & SPACE TECH., May 5, 1980, at 25; Covault, *supra* note 190, at 20. The United States does not regard such steps to be illegal *per se. See, e.g.,* Lipson, *An Argument on the Legality of Reconnaissance Satellites,* 55 AM. SOC. INT'L L. PROC. 174 (First Sess. 1961); Note, *Legal Aspects of Reconnaissance in Airspace and Outer Space,* 61 COLUM. L. REV. 1074 (1961). *See also* Meeker, *supra* note 240, at 75. Other commentators argue that reconnaissance satellites may be used in pursuit of an "inherent" right of self-defense, including anticipatory self-defense. Morenoff, *supra* note 243, at 232-37; Hosenball, *Current Issues of Space Law Before the United Nations,* 2 J. SPACE L. 5, 15-17 (Spring 1974).

263. Lay & Taubenfeld, *supra* note 191, at 187.

Zhukov recognizes the distinction drawn by the Outer Space Treaty between demilitarization in outer space on the one hand, and the demilitarization of celestial bodies on the other. He writes: "If agreement on the complete demilitarization of outer space is reached in the future, the principle concerning the partial demilitarization of outer space and complete demilitarization of celestial bodies will be replaced by the principle governing the use of outer space exclusively for peaceful purposes." Zhukov, *supra* note 257, at 276-77.

Zhukov also expressly admits the possibility of specific military uses of space: "The principle of non-aggression by no means precludes the use of outer space for striking back at an aggressor in self-defense. In other words, it does not mean prohibition of the use of outer space for military aims in accordance with Article 51 of the U.N. Charter . . . ." *Id.* at 272.

Neither power regards the use of outer space for military defense as inconsistent with the principle of common interest.

In view of the fact that both powers are using outer space for at least some military purposes, it is unlikely that they intended, through a principle as vague as the "common interests," to ban *all* military activity in space by signing the Outer Space Treaty.

F. Prospects for the Future Under the Outer Space Treaty

In view of the loopholes within the existing regime of demilitarization and verification in outer space, the space powers are likely: (1) to refrain, for the foreseeable future, from militarizing the moon and other celestial bodies (almost as much due to technological and fiscal difficulties as due to the Treaty's prohibitions); (2) to develop their own (*i.e.,* national) early warning surveillance and detection devices; (3) to resort to overt or covert defensive activities on and around the earth for non-aggressive purposes; (4) to extend these activities to celestial bodies; and (5) to continue the search for mutually satisfactory verification arrangements that guarantee certainty and reliability.

It is therefore tempting to draw conclusions similar to those drawn regarding the 1971 Seabed Treaty. By signing the Outer Space Treaty, the signatories agreed to refrain from doing something with no potential for immediate strategic use—the prohibitions concerned activities in which the signatories had never engaged. One of those activities—the testing of nuclear weapons on celestial bodies—had in fact already been prohibited by the 1963 Nuclear Test Ban Treaty.[264] On the other hand, just as with the 1971 Seabed Treaty, the powers stopped short of complete demilitarization of all activity in outer space and celestial bodies, leaving themselves sufficient freedom to engage in activities of immediate strategic interest. For example, under the 1971 Seabed Treaty, the powers are free to develop mobile underwater armament systems within the territorial sea[265] and, under the Outer Space Treaty, the powers are free to develop and deploy orbital non-nuclear weapons systems.[266] The

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This statement leaves it unclear as to whether the Soviet Union reserves a right to retaliate with space weapons only if it is attacked from space, or regardless of from where it is attacked. The statement seems to pave the way for the argument that a state can retaliate with space weapons against targets on earth even if it is the victim of a purely earth-based attack.

264. *See* Test Ban Treaty, *supra* note 37, at art. 1.

265. *See supra* notes 68-72 and accompanying text.

266. *See supra* notes 226-34 and accompanying text.

One commentator, taking a strongly pessimistic view, argues that the Outer Space Treaty will not contribute toward law and order in space and is a mere "window-dress-

Outer Space Treaty also fails to regulate the development and use of land-based weapons systems capable of launching missiles which pass through space *en route* to targets on land.

The regime of demilitarization that the Outer Space Treaty actually posits is, at best, a modest one that in many respects patterns pre-existing state conduct. The Treaty's drafters, no doubt concerned about the Treaty's long-term viability, had no intention of instituting a radical regime of non-militarization in disregard of present realities and the internal dynamics of the world power balance.

In the short-term, therefore, the Outer Space Treaty has been and will continue to be effective in meeting its immediate goal of prohibiting the militarization of celestial bodies. As to the future prospects of weapons in circumterrestrial space, one may not interpret the Treaty to prohibit the development of such weapons. The Outer Space Treaty should not be criticized, however, for not leading to a result that it was never intended to achieve.

CONCLUDING REFLECTIONS ON THE LAW OF THE SEA AND OUTER SPACE: PROGRESS, PROBLEMS AND PROSPECTS FOR THE FUTURE

The foregoing sections examined the regimes of demilitarization in the oceans (including the ocean floor) and outer space (including celestial bodies). Neither regime purports to achieve complete demilitarization, and in some instances they prohibit that which is under no immediate need of prohibition.[267] Treaty law with respect to both regimes is lacking. The 1971 Seabed Treaty does not greatly affect the strategic forces of either of the two military powers. Although it bans the emplacement of nuclear weapons on the seabed,[268] it permits mobile underwater weapons systems.[269] It also fails to regulate activity in those maritime zones falling under the traditional scheme of national waters: the territorial sea, the contiguous zone, and the continental shelf.[270] Nor does the Draft Convention of UNCLOS III make any significant changes in the existing regime of sovereignty over these zones. The Draft Convention does not restrict the traditional freedoms of the high seas involving navi-

ing" arrangement behind which the space powers will continue to pursue whatever activity they choose. R. Mankiewicz, *Interpretation of the Treaty on Outer Space,* in PROCEEDINGS OF THE ELEVENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 82, 82-83 (1968).

267. *See supra* notes 147-48 & 263-64 and accompanying text.

268. *See supra* notes 37-40 and accompanying text.

269. *See supra* notes 69-72 and accompanying text.

270. *See supra* notes 131-46 and accompanying text.

gation and the immunity of warships.[271] Further, in relation to activities on the seabed, there is nothing contained in the draft articles to compel a departure from the way that such activities on the sea surface have been treated.

The scheme of verification under the 1971 Seabed Treaty,[272] being operative on a national rather than an international level, has an inherent disability. With the signing of the Draft Convention of UNCLOS III, wide zones of exclusive national jurisdiction will emerge—consisting chiefly of twelve-mile territorial seas and 200-mile exclusive economic zones.[273] The wider the zones of national jurisdiction, the more difficult it becomes for any scheme of national or international verification to operate effectively. In sum, neither document will have a significant impact on the preservation of the oceans from the arms race.

Some of the Outer Space Treaty provisions are also open to criticism. While it seeks to preserve the present state of *total* non-militarization of celestial bodies, the Treaty achieves only *partial* demilitarization of circumterrestrial space.[274] Verification is possible only on the moon and other celestial bodies, not in outer space or even on earth-based centers.[275] Where verification *is* possible (*i.e.,* on the Moon and other celestial bodies), it is with respect to a ban which again is not of much importance to the strategic forces of the space powers.[276]

The foregoing review of the effectiveness of international law in the preservation of the high seas and outer space as zones of peace not only reveals the principal strengths and weaknesses in current international law, but it also suggests future avenues of reform. An agenda for future lawmaking for the demilitarization of the oceans and outer space should include the following requirements: (1) a reduction in the quality and quantity of mobile underwater strategic forces (nuclear and conventional) and, possibly, their eventual elimination; (2) a reduction in the quality and quantity of non-nuclear orbital weapons systems in circumterrestrial space and, possibly, their eventual proscription; (3) the inclusion in the ban of the seabed and superjacent waters of the entire twelve-mile zone of coastal states; but if this proves unacceptable, the restriction of the width of

271. *See supra* notes 85-88 and accompanying text.

272. *See supra* notes 118-30 and accompanying text.

273. *See supra* notes 102-104 and accompanying text.

274. *See supra* notes 226-34 and accompanying text.

275. *See supra* notes 218-19 & 237-38 and accompanying text. It is ironic that verification as to compliance with the ban on nuclear and mass destruction weapons would not be possible under Article IV of the Outer Space Treaty. *See supra* note 219.

276. *See supra* notes 237-45 and accompanying text.

the territorial sea within very narrow limits, bearing in mind that the more narrow the territorial sea, the wider the area of international surveillance and control; (4) the development of a scheme of unrestricted and compulsory international (rather than just national) verification of state activity in the oceans and in outer space; (5) the definition of the nature and location of purely passive, listening, scanning and observation devices, underwater along pre-determined lines of coastal proximity, and in outer space in accordance with pre-determined orbits around the earth; and (6) the prohibition of the national appropriation of international ocean space in general (including the surface and columns of water beneath the surface).

The foregoing review also reveals that peace cannot be legislated into place through a crusade for reform of the existing treaty law. Any zeal for reform will have to be tempered by a sober appreciation of the fact that, under the present system of international organization, what is desirable may not always be practicable. One of the best guides as to that which *is* practicable is actual state conduct (and the reasons and policies behind it), and an acceptance of the fact that competing state claims are legitimized or tolerated depending on the degree to which they approximate the commonly accepted ideal of peace and justice. This basic premise suggests the approach, advocated by the present writer, that state conduct is an important guide in the interpretation of the current law of peace on the high seas and in outer space.

Observation of the present system of international relations shows that international peace and order does, in many important respects, rest on a balance of power and mutual deterrence between states. In the absence of a strong central authority charged with the responsibility of enforcing international peace, the development of offensive and defensive weapons systems on land, in the seas, and in space must be recognized as an important dynamic in the preservation of this global balance of power. The balance cannot be "abolished" by treaty law.

Instead, the current trend of the relevant treaty law is to freeze the *status quo,* leaving the option of achieving demilitarization and disarmament for future stages.[277] Thus, the sea and space treaties do

277. An example is the recently negotiated Strategic Arms Limitations Treaty of 1979 (SALT II). While the 1971 Seabed Treaty prohibits the emplacement of stationary nuclear weapons or missiles on the ocean floor, SALT II proposes to prohibit the development, testing or deployment of stationary *or* mobile strategic nuclear missiles designed to be placed on, or able to move in contact with, any part of the ocean floor, including portions that are subjacent to internal waters. Article IX of the proposed treaty (which has not yet come into force) provides:

(1) Each party undertakes not to develop, test, or deploy:

. . . .

not ban mobile underwater strategic forces or orbital weapons systems. What the treaties do ban is the deployment of nuclear weapons and weapons of mass destruction on the seabed, in circumterrestrial space and on celestial bodies. This by itself is a significant achievement. If the seas and outer space are to be reserved for peaceful purposes, however, the law will have to go much further.

(b) fixed ballistic or cruise missile launches for emplacement on the ocean floor, on the seabed, or on the beds of internal waters and inland waters, or in the sub-soil thereof, or mobile launches of such missiles, which move only in contact with the ocean floor, the seabed, or the beds of internal waters and inland waters, or missiles for such launches . . . .

Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Strategic Offensive Arms, *signed* June 18, 1979, Selected Documents No. 12A, 26, 41 (Bureau of Public Affairs, Dep't of State).